

# Marine Review

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THE BUSINESS OF TRANSPORTATION BY WATER

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## On Some of America's Finest Recent Vessels Equipped With Dunn Stockless Anchors

### U. S. Shipping Board

S. S. Leviathan  
S. S. Mikiarza  
S. S. Purwell  
S. S. West Hesseltime  
S. S. Cliffwood  
S. S. Manhattan Island  
S. S. Western Plains

### Pan American Petroleum & Transport Co.

S. S. O. D. Bennett  
S. S. Norman Bridge

### Standard Oil Company of New Jersey

S. S. A. C. Bedford

### Imperial Oil, Ltd.

S. S. Victrolite

### Interstate Steamship Co.

S. S. B. F. Jones

### Oriental Navigation Co.

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### Isthmian Steamship Line

S. S. Steel Voyager  
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S. S. Crofton Hall

### Baltimore & Carolina Steamship Co.

S. S. Mary Weems

### Furness-Withy and Co.

S. S. Manchurian Prince

### Ocean Steamship Company

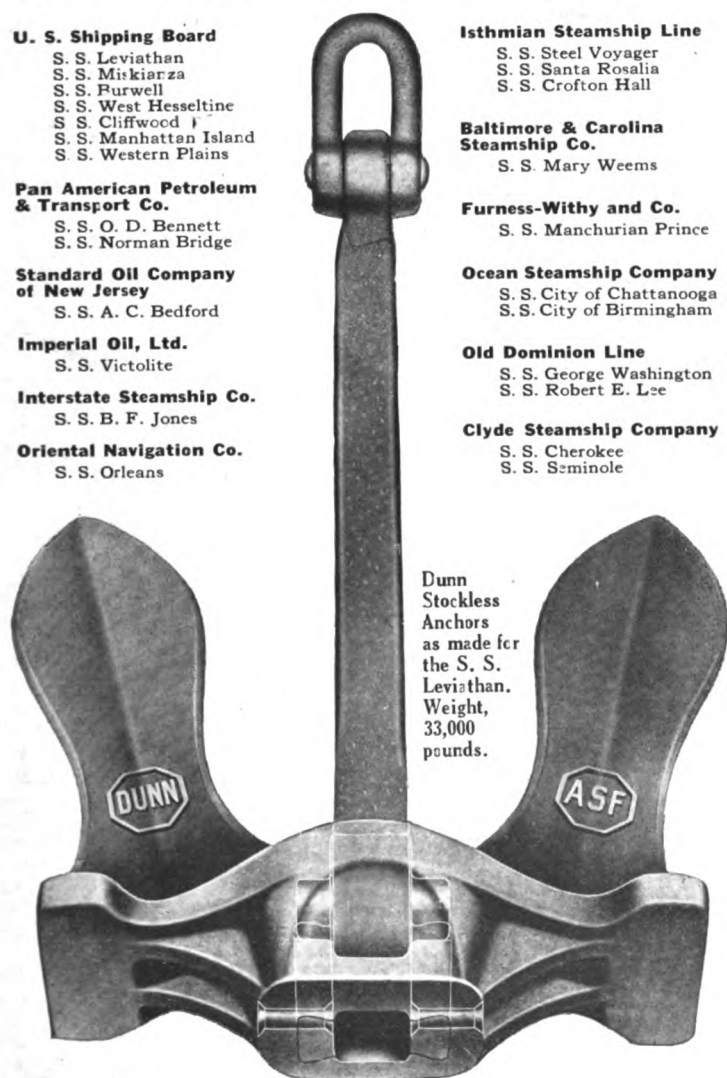
S. S. City of Chattanooga  
S. S. City of Birmingham

### Old Dominion Line

S. S. George Washington  
S. S. Robert E. Lee

### Clyde Steamship Company

S. S. Cherokee  
S. S. Seminole



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Stockless  
Anchors  
as made for  
the S. S.  
Leviathan.  
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Chester, Pa.

## Your Guide To This Issue

### Stability Tests

**S**AFETY can only be attained by eternal vigilance. Before issuing the necessary certificate, the United States steamboat inspection service now determines the measure of stability of all passenger vessels. Inclining experiments are made.

See Page 317

### British Shipping

**C**HEAP wages, good maritime laws and a natural call to the sea, which has made them old in experience, are not enough to offset the present difficulties of the British.

See Page 321

### State Ownership

**A**MERICA'S only hope for a permanent virile merchant marine is private ownership. Recent sales of government owned ships and established lines, is distinctly encouraging.

See Pages 325 and 335

### Scrap Old Ships

**A**N AUTHORITY on modern design and construction of ships replies to the suggestion that it is a waste of useful property to scrap the laid-up fleet.

See Page 327

### Marine Exposition

**O**NCE more after a two years' holiday a Marine Exposition will be held in New York Nov. 9-14, at the Armory, Sixty-second street and Columbus avenue.

See Page 338

### Dock Management

**A**FTER failure of government operation, private management is profitably operating the gigantic army supply base dock in Boston.

See Page 339



# What makes a double play?



**G**OOD FIELDING by the short stop is not enough. Second base must be covered, and so must first. Double plays are team plays and every man must play his part.

Oxy-acetylene welding requires double plays, too.

A good weld does not make oxy-acetylene welding an economical part of your business. The weld must be good, it is true; but in addition, the work must be handled rapidly and economically if the oxy-acetylene process is to become an integral part of your production.

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A forty-mile pipe line had to be laid in a country where the temperature ranged from 30 below to 90 above zero. The engineers came to the reluctant conclusion that a welded line would not permit enough expansion. The Service Engineer calculated the expansion for them and convinced them that a special joint every two hundred feet would be adequate. In addition, he showed them how to "leap frog" their welding gangs from either end of the line, using only one gang to line up the pipe for each two gangs of welders. And so the company has a better and cheaper and more permanent line than they could have had without service.

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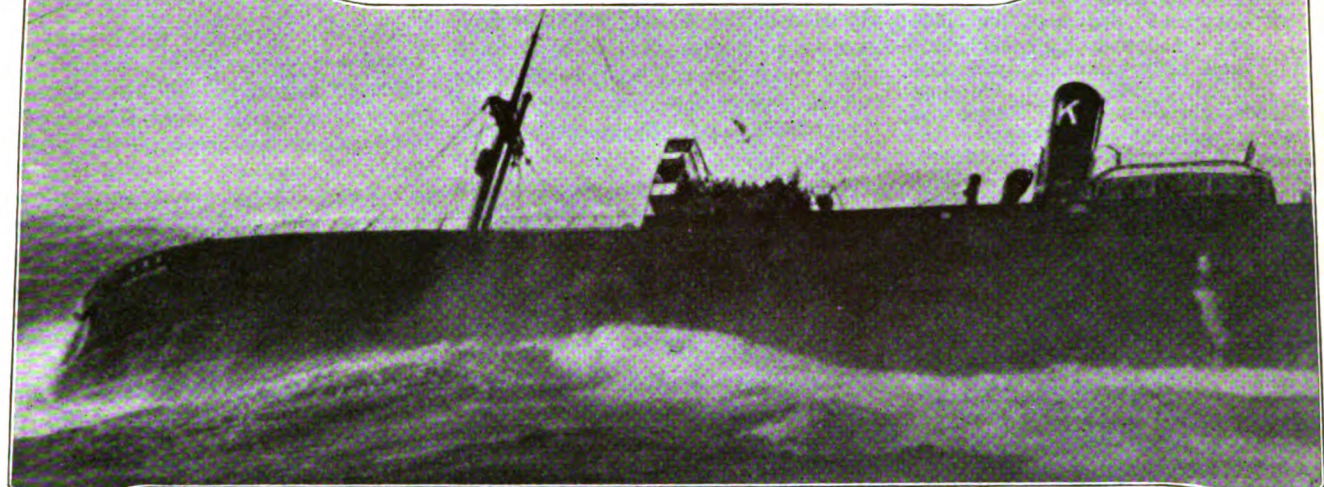
# LINDE OXYGEN

YOU CAN DEPEND ON THE LINDE COMPANY

*Please mention MARINE REVIEW when writing to Advertisers*



# Stability Is Vital to Safety *Take No Chances*



The freighter RAIFUKU MARU grain laden out of Boston capsized in a storm 180 miles off Halifax, Nova Scotia on April 21, 1925, with the loss of her entire crew of 48 officers and men

## United States Requires Inclining Tests for Passenger Ships

WHILE rules and regulations may be formulated by municipalities for the protection of buildings against fire, the very least that can be said upon that subject will easily convince any one that the surest way to prevent fire is not necessarily by the use of fire-fighting apparatus, but by the construction of buildings that do not burn with facility. If an examination be made of the general rules and regulations prescribed by the board of supervising inspectors of the United States steamboat inspection service, it will be seen that there are numerous provisions in those rules and regulations looking to the inspection of equipment on board ship, and in this respect also the least that can be said will show that the best way to insure safety on shipboard is to commence with the ship itself as distinguished from its equipment.

Vessels float in water, and the very first thing to be considered is whether the vessel, when constructed in a shipyard, is going to float with safety, that is to say, with safety, leaving out of consideration at first the possibility of storm and stress of weather. In other words, whether the ship itself has been constructed with proper stability to insure safety to those who are to travel upon her. For, if this factor be overlooked, of what avail is it to have bulkheads in the ship, of

what avail is it to have fire hose, to have lifeboats, to have life preservers, or in fact, any and all of the equipment and paraphernalia that goes with the vessel? If the annual reports of the supervising inspector general be examined, it will be found that for the fiscal year ended June 30, 1910, the supervising inspector general suggested and recommended the advisability of passing upon ship construction. While that recommendation has not been acted upon, a system has been adopted in lieu of that proposal which, while not accomplishing to the utmost the result desired, yet has accomplished a very material and constructive good in now enabling the supervising inspector general to determine whether vessels have the proper stability.

### Rules Specify Stability Tests

Section 16 of rule VII, general rules and regulations prescribed by the board of supervising inspectors, provides that:

"When inspectors have any reason to question the stability of any vessel under their jurisdiction, they shall require the owners of the vessel to make inclining tests on such vessel, under the supervising inspector general.

On and after July 1, 1924, every passenger or ferry vessel of 500 gross tons or over, propelled by machinery, and every passenger or ferry vessel intended to carry 50 or more passengers, in either



case when making application for first inspection to carry passengers, shall be subjected to an inclining test conducted under the supervision of the supervising inspector general, and the results of the test shall be approved before the vessel shall be certificated.

The owner or builder of every vessel described in the second paragraph of this section shall, as soon as possible, furnish the local inspectors of the district where the vessel is to be inspected drawings or blue prints, as follows: Sheer, half breadth and body plans, midship section, inboard profile, floors, framing, bulkheads, arrangement of decks and quarters; general arrangement and location of boilers and machinery, plan and elevation; plan and elevation sections through holds, tanks, bunkers, double bottoms, and compartments; capacity plan of the bunkers, tanks, holds, double bottoms, and compartments; and the following curves: Displacement, vertical center of buoyancy, transverse metacenter, longitudinal center of buoyancy, transverse metacenter, center of gravity of water planes from either perpendicular, moment to alter trim, and tons per inch; except for double end ferry boats, then the drawing or blue print of curves will only be required to show the displacement, vertical center of buoyancy, transverse metacenter, and tons per inch. The drawings and blue prints required by this paragraph shall be forwarded, upon receipt of same, by the local inspectors to the supervising inspector general.

Where vessels are required to carry fixed ballast, in order to increase the metacentric height, such ballast shall not be moved except for examination and repair of vessel, and then only in the presence of an inspector of this service. (Sec. 4405, R. S.)"

It will be observed that the stability tests of this service are conducted under the supervision of the supervising inspector general, and this work is at present being done by Capt. Chester W. Willett, one of the traveling inspectors, who has his headquarters in the office of the supervising inspector general, in Washington, D. C. Captain Willett is an officer of extensive experience, and formerly had his headquarters in Cleveland. While considerable study is required in perfecting the details of a practicable and efficient method for conducting stability tests, there is nothing mystifying about the calculations for stability. They are merely a mathematical application of the laws of gravitation, and a little necessary yawning before proceeding with the measurement.

#### An Inclining Experiment Is Made

Upon conducting an inclining experiment, the ship is first put in condition, plumb bobs are suspended from convenient places and arranged in such manner that accurate records of

the lines may be made, and their deflections measured on a batten. The weights of the inclining ballast are carefully made and recorded and the distance of the movement of the weights accurately determined. Assigned positions are taken by all men on board, the draft marks are read, and zero readings made on the batten. The weights are then moved, and various checks made of the inclination of the vessel, and aside from numerous details the work is complete, ready for a continuation of the calculations which have begun with the offsets and displacement sheet of the vessel. The position of the center of gravity is now found by subtracting from the height of the metacenter the result obtained by multiplying the cotangent of the angle of inclination by the moment of

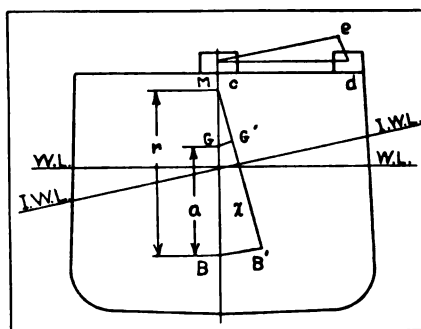


DIAGRAM ILLUSTRATING AN INCLINING EXPERIMENT TO DETERMINE CENTER OF GRAVITY

the inclining weights divided by the weight of the ship. Weights and passengers are now moved on and off the vessel, in algebraic sums only, and various conditions are worked out on forms and the measure of the stability is thus actually determined.

Stability of a ship in its finality is a somewhat complicated subject, and, in all its phases runs the gamut from the simple to the complex. Many factors enter into the final calculations which can only be properly treated in a text book on the subject. Ships vary to a great extent and to determine the value of stability each type must be sliced and cored, and, in the mathematical analysis of the complexities, the measure is found. Ships may vary, but figures are constant, and facts agree. The measure of the weight of volume of water displaced by a vessel at any draft is the total weight of the ship. For convenience the word volume is used. Volume here implies bulk. The basic principle of the stability of a vessel is the location of the center of gravity of its volume. From these two laws, discovered by Archimedes and Newton,

respectively, are deduced all the principles and laws governing a ship's stability. From the laws of gravitation, the center of gravity of a fixed body is the center point of its volume, and without calculation it is known that the center of gravity of a homogeneous circular plate is the center point at which the plate will balance, or the center point of the circle.

The hull of a ship and weights on board are composed of unevenly distributed materials, and each separate mass of material, regardless of size or location, has a center of gravity point, but as the force of cohesion is greater than gravitation in the unit, the resultant sum of the infinite number of forces of gravity of the connected masses which is called the ship, act in unison. In order for a designer to determine the location of the center of the vessel, he must calculate the exact weight and location of everything that enters into the construction and equipment of the vessel. It therefore becomes impracticable, if not impossible, for an architect to determine accurately the center of gravity of a vessel by any other means than by an inclining experiment. The purpose, therefore, of the inclining test is to determine the position of the center of gravity of the vessel, from which the measure of the initial stability is made, as well as other calculations to determine the statical stability, range, and vanishing point of stability, with a view to assuring a stable ship as a measure of public protection.

#### Location of C. G. All Important

As the body of a ship is symmetrical of both sides of the fore and aft center line, the center of gravity must be at some point in the fore and aft center vertical plane, and is constant only for a fixed condition. A body suspended in the air is acted upon by gravity alone, and the location of the center point of the weight relative to the supporting point determines whether the body will remain upright or upset. The same body when afloat in calm water is acted upon by gravity in the same manner, but now receives that upward support of the surrounding water, which we called pressure, or buoyancy. These opposing forces, each of the same amount upward and downward, are influenced in their action by the position of the center points of their volume. When the body is at rest or in equilibrium these two forces act along one line, that is, the center of volume of the displaced water is on a



vertical through the center of weight of the body. The center point of the volume of water displaced by any vessel, instead of being called the center of gravity is known as the center of buoyancy. This is really the center of the upward pressure. The center of gravity and the center of buoyancy of a ship vary with every condition, and their position determines a ship's stability when upright or when inclined to any angle.

The shape of the bulk below the water line and the distribution of the weight in the bulk are the determining factors of stable and unstable equilibrium. A vessel is said to be in stable equilibrium for a given direction and angle of inclination if, on being inclined to a named angle, it tends to return to the original position of rest. If the vessel be inclined through a small angle from the position of equilibrium, the center of buoyancy of the displaced volume moves outward, and the vertical lines drawn through the successive positions of the center of buoyancy, as it moves outward, all pass through a single point on the vertical line through the center of buoyancy corresponding to the original position of equilibrium. This point is called the metacenter, and it is the point above which the center of gravity cannot be raised for stable equilibrium, and the distance between the center of gravity and the metacenter is the measure of initial stability. The distance from the center of buoyancy to the metacenter is called the metacentric radius.

#### Determination of Initial Stability

In naval architecture, the geometrical form of the vessel is laid down in lines representing horizontal and transverse planes through the ship. From these lines the volume of displacement is calculated to successive water lines including the load line. The position of the center of buoyancy of the volume of displacement (which is really the center of gravity of the displaced volume) is calculated by summing up the moments of transverse sections about some reference line and dividing the result by the volume of displacement in cubic feet. The metacentric radius is determined by dividing the transverse moment of inertia of the water line by the volume of displacement in cubic feet. The displacement of the vessel, the center of buoyancy and the metacenter is now determined, yet there is one point that has not been established. That point is the position of the center of gravity which determines the stability

of the vessel. It is known that the center of gravity of the vessel is usually somewhere between the center of buoyancy and the metacenter, but the location must await the results of calculations based on forces applied in the inclining experiment.

Having made all the necessary arrangements for conducting the inclining experiment as detailed above referring to the accompanying diagram the center of gravity is determined as follows: Let a weight or weights be moved from amidships to one side from  $c$  to  $d$  producing a small inclination of say about three or four degrees. The new water line will be the inclined water line  $I. W. L.$  in the diagram, and the new positions of the center of gravity and the center of buoyancy will be  $G^1$  and  $B^1$ . Since the value of  $r$  or metacentric radius is known and also the location of the center of buoyancy  $B$ , the distance  $A$  can be readily determined if the angle of inclination is measured. Where  $D$  is the displacement of the ship including the small weight  $w$ ,  $r-a$  the metacentric height and  $x$  the angle of the inclination, then  $G G^1$

$$= \frac{w \times c \times d \cos x}{D} \quad \text{and} \quad G M = \frac{G G^1}{\sin x}$$

or substituting,

$$G M = \frac{w \times c \times d}{D \times \tan x}$$

Now by reading the distance moved by the plumb bob on the graduated scale during the inclining experiment the quantity  $\tan x$  can be determined at once and the above equation can then be solved for  $G M$  or metacentric height and the center of gravity located.

Complete calculations of stability can be made before or after the determination of the location of the center of gravity from the lines of the vessel but if they are made before such determination they must be based on an approximated or calculated position of the center of gravity which is subject to error and the righting arms for various conditions and inclinations are affected accordingly.

After taking into consideration all of the data obtained at the inclining test, and after applying the correct mathematical rules to each vessel in question, the office of the supervising inspector general decides on the instructions that shall be given to the United States local inspectors who have original jurisdiction in the matter of the certification of vessels. These instructions are then sent to that particular board of local in-

spectors and the certificate is issued.

The beneficial effect of conducting stability tests is being felt because there is now actual statistical data showing that ships required by the rule to be inclined do have the proper stability. These constructive effects will be felt from year to year and for all of the years to come, and it is to be hoped that, as time goes on, God being willing, the number of mysterious disappearances of vessels at sea will decrease, and that there will not again occur any great disaster due to the capsizing of a ship.

### National Safety Council Meets in Cleveland

A convention is to be held by the National Safety council in Cleveland Sept. 28 to Oct. 2, 1925. The tentative program for the marine section of the National Safety council will include the following papers submitted by their authors; Fuel Oil, The Elimination of all Hazards Incident to its Handling, by John H. Weller, manager of the Barber Asphalt Co., Maurer, N. J.; Marine Statistics, Their Value and Compilation, by R. F. Edwards, Prudential Insurance Co. Newark, N. J.; Factors Contributing to Safety on Board Ship, by Hon. T. V. O'Connor, chairman United States shipping board, Washington, D. C.; General Safety Development in the Marine Industry on the Great Lakes, by Charles E. Cole, superintendent Ohio and Western Pennsylvania Dock Co., Cleveland O.; Observations on the Principles of Marine Safety, by H. H. Brown, editor *Marine Engineering & Shipping Age*, 30 Church street, New York City; Some Practical Phases of Safety at Sea, by Capt. John F. Milliken, secretary and treasurer Neptune association, 82 Broad street, New York City; Marine Safety, by Capt. Arthur J. Henriques, 25 Broadway, New York city; Organizing for Safety on Board Ship, by A. R. Bush of the Barber Asphalt Co., Maurer, N. J. It is also expected that representatives from the Emergency Fleet Corp. will take part in the program, also several others who have not yet signified their definite acceptance.

### Steamer's Boiler Explodes Serious Loss of Life

On the evening of Aug. 18 the excursion steamer MACKINAC said to be owned and operated by the Blackstone Navigation Co., plying between Pawtucket, R. I., and Newport, R. I., with a large complement of pas-



sengers, while in Narragansett sound one mile north of the city, had a serious boiler explosion, resulting up to the time when this is written in the death of 42 persons, 4 missing, such serious injury to at least 8 that they cannot live, and many others less seriously hurt. All the injuries were caused by the scalding steam from the ruptured boiler.

Investigations both state and federal started practically at once. In-

spector General George Uhler, head of the United States steamboat inspection service left Washington the day following the accident, arriving in Providence on the morning of Aug. 20 immediately went to Pawtucket where the Mackinac was laid up, and made a careful personal inspection of the wreckage. As always when the inevitable disaster occurs the responsibility rests heavily on the inspection service.

a distance of 126 miles, at a fuel cost of but \$10.

This freighter has a large carrying capacity on her spacious deck thus saving thousands of dollars a year in stevedore costs. On account of the twin screws it is easy to maneuver. By backing on one engine and going ahead on the other this large vessel can be handily turned in the narrow channels in a very short space of time. It is also easy to make landings at a pier where the space is narrowed to the very limit. The engines respond quickly and fully to the will of the captain, starting up at low revolutions and accelerating as the bell is given for either ahead or reverse.

The freight carried is canned goods and farm products from Salisbury, and machinery and perishables and automobiles from Baltimore. It is stated with assurance that the engines will pay for themselves in a short time.

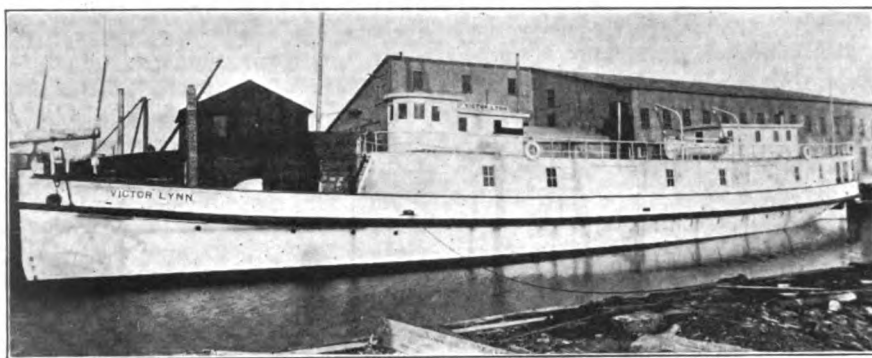
The smooth and quiet running of this vessel is quite noticeable and speaks well for the quality of the full diesel oil engines used.

It is believed that this service is the forerunner of hundreds of similar freight lines running nights and loading days, which will again build up the river traffic of the country even beyond its former large proportions. Due to the particular adaptability of the diesel oil engine on account of its economy in fuel and in operating crew, vessels equipped with this type of power can now resume routes given up by steamboats and can enter fields never before attempted on account of the severe competition with railroads, killing water transportation.

## Diesels Cut Fuel Bill

WHEN A. A. Wootten of Salisbury, Md., planned the VICTOR LYNN he had in view providing a reliable freight service at low cost. Those who have traveled on or shipped freight via this boat

feet 6 inches. She is built of steel, is rated at 372 gross tons and is equipped with two 135 horsepower each Standard Motor Construction Co.'s oil engines. With these engines turning twin 3-bladed propellers 50



STEEL FREIGHTER 148 FEET LONG AND 25 FEET WIDE—EQUIPPED WITH TWO 135-HORSEPOWER OIL ENGINES—RUNS 126 MILES IN 10 HOURS AT A COST OF \$10.

know that Mr. Wootten can make money at a freight rate on which the old time steam boat could not exist

The VICTOR LYNN is 148 feet long, 25 feet beam and has a draft of 6

inches in diameter and 50 inches in pitch at 350 revolutions per minute. She leaves either Salisbury or Baltimore every night and arrives at either Salisbury or Baltimore in ten hours,

## Port Newark Shows Steady Growth

IN all, there are 1200 acres in the Port Newark area. Since the reclamation of this expanse of mire and tangled vegetation was commenced more than 500 acres have been transformed into hard, firm land, ideally suited to industrial and street purposes. Improvement of the property is continually under way and additional land will be reclaimed as it is needed.

Work had continued for three years, and the terminal was gradually taking form, when the war came, to put a temporary stop to the development. The government bought land within the port zone for the army supply base, on which it spent \$12,000,000 for docks, warehouses and equipment for handling freight. During the war

also, the shipping board leased land there, on which it built its ship building yard at a cost of \$30,000,000.

With the close of the war, the city resumed its program. The government channel from the city waterfront to the mouth of Newark Bay was deepened from twenty to thirty-one feet. Later the government appropriated \$2,000,000, with which the channel was widened from 200 to 400 feet, and improvements were made in the harbor. Now the largest ocean freighters, in fact any ship in the world excepting a few of the Atlantic passenger liners, can pass through the channel and into the basin at the terminal.

Development of the terminal has been guided by the assumption that

here is the natural eastern terminus of practically all the great transcontinental trunk lines. Port Newark is officially and naturally a part of New York harbor, while its own sheltered harbor is one of the finest along the Atlantic coast. There is now a thirty-one-foot channel from the terminal to the ocean. There is an inland basin 670 feet wide, with a channel of the same depth as the one outside and flanked by 6800 feet of concrete dock.

As for the ocean end of the port's activities, there are now liners of the Transmarine corporation with regular ports of call at Houston, Port Arthur and Beaumont, Texas, Mobile, Ala.; San Francisco, Los Angeles, Portland and Seattle. Freight to the extent of 20,000 tons a week is now carried.



# Britain's Mercantile Marine *Faces Stone Wall*

Shipyards Idle—Coal Movement Reduced—Freight Markets Demoralized—Return Cargoes Hard to Get—Balance of Trade Unfavorable—Available Tonnage Greatly Exceeds Demand—New Motor Ships Under Construction—Elastic Limit Steel Reduces Weight by 10 Per Cent—Terminal Improvements Continue

of  
Depression  
and  
*Is Fighting*  
to  
Keep Going

BY VINCENT DELPORT  
*European Manager, Marine Review*

SAILING down the river Clyde from Glasgow always has been of particular interest to the marine engineer. For several miles one sees and hears shipyards on both sides of the river. These are operated by firms who have been prominent in making the history of modern shipbuilding. The trip made today only serves to illustrate the present state of depression of this industry in Great Britain. Many of the shipyards have closed entirely, and those which are working are only partially employed and with but slight future prospects. The situation of the British coal trade also has become acutely critical. Freight markets were unfavorable during the first three months of the year. A slightly better tendency developed at the beginning of May, but this improvement did not last and since then the situation has been going from bad to worse. It is only as these lines are being written that homeward freight markets show some signs of revival, while the volume of British trade continues considerable.

## Coal Tonnage Drops

The development of water-power in France and Italy, the increasing output of French and German mines, and lower production costs on the continent are restricting the demand from these markets for British coal. In March 1925, for instance, Germany only imported 336,300 tons of British

coal as against 620,584 tons in March 1924. Russia also is introducing coal in the Greek and Italian markets. The total exports of coal from Great Britain for the first five months of 1925 were 22,114,598 tons as against 26,248,766 tons in the corresponding period of 1924 and 33,220,230 tons for 1923. The tonnage of coal shipped for use of steamers engaged in the foreign trade is also decreasing, the tonnage for the period ended May 31 being 6,968,212 tons, 7,346,835 tons and 7,557,228 tons, for 1925 and the two preceding years respectively. A partial improvement in the situation would result if British mines were operated more efficiently, helping to bring down production costs.

The foreign trade of the United Kingdom, exclusive of bullion and specie and invisible imports and exports, shows an increasing adverse balance. The value of British exports for the five months ended May 31, 1925 was £333,765,980 (about \$1,620,000,000) as against £326,440,564 (\$1,585,000,000) for the same period of last year, or 2.5 per cent in excess. On the other hand, the value of imports for the first five months of this year was £566,659,893 (\$2,750,000,000) compared with £509,763,348 (\$2,475,000,000) in the same period of 1924, or 11.2 per cent in excess. The adverse balance of trade for the first five months of 1925 was £253,803,913 (\$1,103,000,000) as against \$890,000,000 during the first five months of 1924,

or an increase of 27 per cent. The export values compared with those of last year showed a decrease of £9,131,132 (\$44,400,000) for coal alone; the decrease for iron and steel and their manufactures was £3,703,255 (\$18,000,000). Coke and manufactured fuel also showed a decrease. The largest increases of export values were for cotton yarns and manufactures, vehicles, including locomotives, ships and aircraft, and machinery. There was a reduction in import values of iron ores and scrap of over one million pounds, but considerable increases for food, raw cotton, raw wool and metals.

## Trade Barely Balance

Reviewing the trade position and trade prospects at the house of commons, Sir P. Gunliffe-Lister, president of the board of trade, showed how the adverse balance of trade relating to visible imports and exports had gradually increased since 1923. He also pointed out that by taking into account invisible imports and exports, the position could be considered as balanced after showing an ample favorable balance in previous years. He further stated that he could not admit that Great Britain is living on her reserves, but that the nation is certain reinvesting borrowed money, as indicated by the growth of national savings certificates and of savings bank deposits, by the volume of new issues and by the stability of the



exchange which remains quite steady.

Entrances and clearances of vessels into and from British ports for the first five months of 1925 were slightly in excess of the figures for the corresponding period of 1924 both in numbers and in tonnage. In the period under review, a total of 21,096 vessels, trading foreign, of 21,362,924 tons entered British ports with cargoes, compared with 19,572 vessels of 20,427,507 tons in 1924. From Jan. 1 to May 31, this year, 25,099 vessels of 25,600,445 tons cleared from British ports with cargoes to foreign destinations, including British Dominions, compared with 26,592 vessels of 26,271,398 tons in the corresponding period of 1924. Entrances of both foreign and British ships have increased as to number and tonnage. Clearances and British ships have decreased in number but increased as to tonnage,

ward coal rates have varied but little, except to Buenos Ayres in which case the rate increased from 11s (\$2.57) to 18s (\$4.37) in order to make up for unsatisfactory return freights.

#### Tonnage Exceeds Requirements

These low rates are the result of the enormous amount of available tonnage which is to be absorbed, following the restricted demand for space. There are about a dozen steamers for every firm order on the markets. There were signs of activity in the River Plate market, also at Montreal, at the beginning of May, but since then matters have become gradually worse. Although stocks of grain in Europe are low, circumstances compel buying to be effected on a hand-to-mouth basis. The Eastern market is weak. Boats have returned from the Black Sea in ballast, and Montreal

conditions in the freight markets account for the fact that owners are not contracting for new tonnage, especially at the average price asked by British shipbuilders, which is about £9 (\$43.75) to £9 10s (\$46) a ton. As a result, the British shipbuilding industry is in a serious condition, unemployment in the shipyards is considerable and on May 25 there were over 80,000 men out of work with an increasing tendency. Lloyd's Register of shipbuilding returns show that for the quarter ended June 30, the tonnage under construction in Great Britain and Ireland was 1,093,587 tons, or about 72,000 tons less than at the end of March 1925 and about 423,000 tons less than a year ago.

A recent shipbuilding engineering development is the construction of the twin-screw motor vessel PROMETHEUS

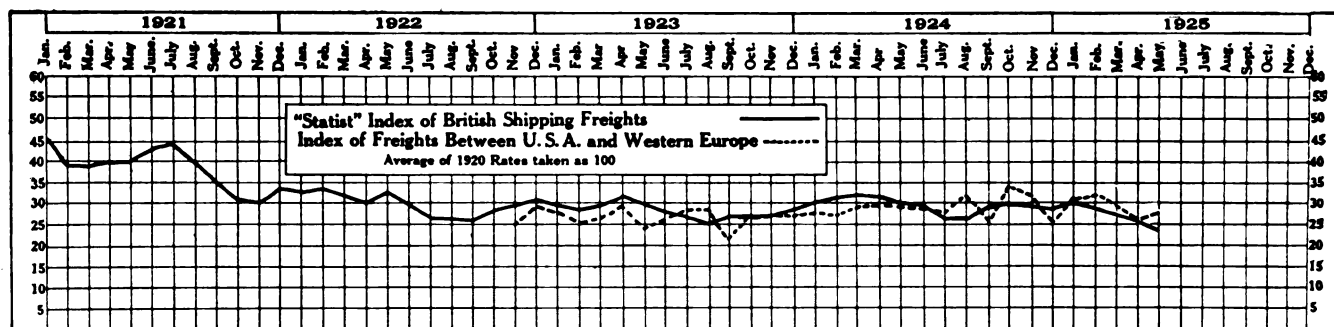


DIAGRAM SHOWING FLUCTUATION OF OCEAN FREIGHT RATES FOR FOUR YEARS AND FIVE MONTHS

while clearances of foreign ships have decreased in numbers and tonnage.

The freight markets have reached a state which has been qualified as of unprecedented depression. The acuteness of the crisis is such that the Baltic and White Sea conference which met at Oslo, Norway on June 18, adopted a resolution aiming at the regulation of the supply of tonnage. One resolution also urgently called on all shipowners to "lay up their ships rather than enter into any charter that does not give some reasonable hope of a margin of profit." As a matter of fact, a considerable tonnage is laid up as a result of the restricted demand. The *Freight Register* estimates that in the River Plate alone, 180 vessels are laid up, aggregating about one million tons. All homeward rates have declined since the end of December, 1924. Grain from the River Plate to the United Kingdom has dropped from 25s 6d (\$6.20); grain from the Danube to British ports has dropped from 19s (\$4.62) to 17s 6d (\$4.25); rice from Burmah to British ports has dropped from 33s 9d (\$8.20) to 22s 6d (\$5.48); grain from Australia to Great Britain has dropped from 49 (\$11.90) to 35s (\$8.50). Out-

and the Northern range have become dull in turn. Coal fixtures have been taken from Hampton Roads to South America at rates forced down by cut-throat competition, while Cuban sugar requirements have not been sufficient to enable owners to meet expenses. As a result, a round voyage done at any profit at all is an exception, while a few owners are ordering their boats back in ballast in order to lay them up at home, awaiting for more favorable circumstances. However, this course of action is not generally adopted since it tends to help foreign steamers which are on the look-out for any business to be captured. A more hopeful tone has prevailed since the beginning of July; homeward freight markets have improved and the undertone is better. About 30 fixtures were put through on one day, which is an improvement on the past.

#### Shipbuilding At Low Point

The index number of British shipping freights, as can be seen on the accompanying chart, dropped continuously from the beginning of the year when it pointed at 30.20 until May when it reached the very low point of 24.3. The present con-

by Alfred Holt & Co. of Liverpool, in co-operation with Scott's Shipbuilding and Engineering Co., Greenock. The ship is built of what is termed "elastic limit steel" giving a decrease of 10 per cent in weight of material, representing about 400 tons additional carrying capacity on a ship of 6300 tons gross. Actual service tests will be completed. The most powerful motorship in the world, the passenger liner ASTURIAS was launched on July 7 from the yards of Harland and Wolff in Belfast for the Royal Mail. The vessel registers 22,000 tons gross and has four-cycle double acting diesel engines developing 20,000 horsepower on two shafts. She is intended for the South American trade. Another motorship, the ALCONTARA is being completed on the same lines by Harland and Wolff, of 21,000 tons and will be fitted with diesel engines of 10,000 indicated horsepower of the Burmeister & Wain type. The speed of the engine is 115 revolutions per minute, each of the eight cylinders having a 33-inch bore and 59-inch stroke.

An order for a passenger steamer 300 feet long has been awarded to a British firm for Canada. A new de-



signed cross-channel passenger steamer, the ISLE OF THANET was launched on June 22 at Dumbarton, Scotland. It is built on the same general lines as an Atlantic steamer and its speed is estimated at 22½ knots. It will be followed by a sister ship. On June 10, Swan, Hunter and Wigham Richardson, Ltd., launched the steamer GLENLEI for the Great Lakes Transportation Co., Ltd. of Ontario, Canada. An interesting feature is that the vessel is built in order to pass through the locks of the Welland canal by omitting 144 feet of the mid-

ship body which will be taken out separately in the ship itself. Out of two first-class cargo steamers for the Manchester Lines, the MANCHESTER COMMERCE built by the Furness Shipbuilding Co. Ltd., for North Atlantic service, has successfully carried out steam trials. It is constructed to resist ice. The Blue Star Line has ordered two 12,000-ton vessels from Lithgows, Ltd. of Port Glasgow. The Fairfield Shipbuilding and Engineering Co., Glasgow have secured an order for a twin screw turbine passenger steamer, 320 feet

long, for the Liverpool and North Wales Steamship Co.

With the view of providing for the provision of oil storage and fuel depots, the British admiralty are asking parliament to sanction an expenditure of £150,000 (\$730,000) for the work to be effected at Pembroke in the current financial year, and £206,000 (\$1,000,000) in the following year. The total expenditure is estimated at £400,000 (\$1,840,000), of which £44,000 (\$214,000) have already been spent. The Port of London scheme is progressing favorably.

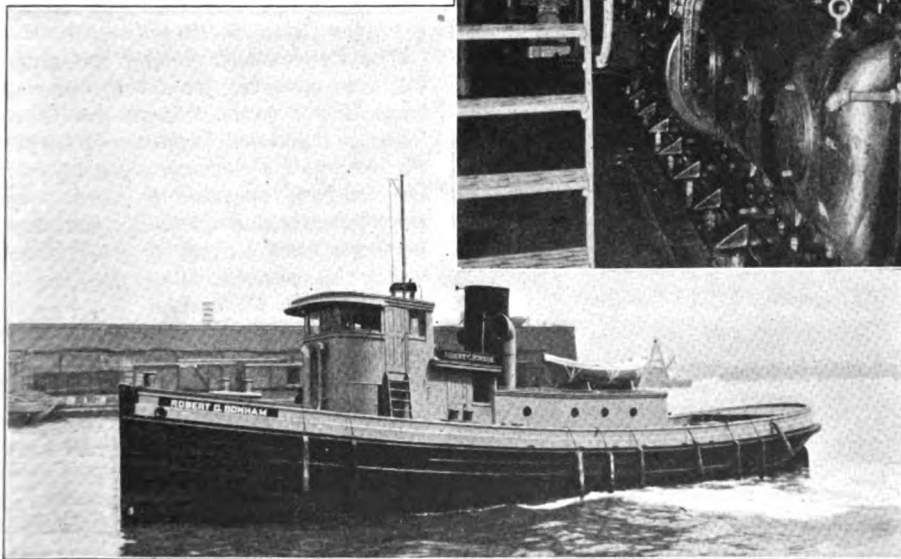
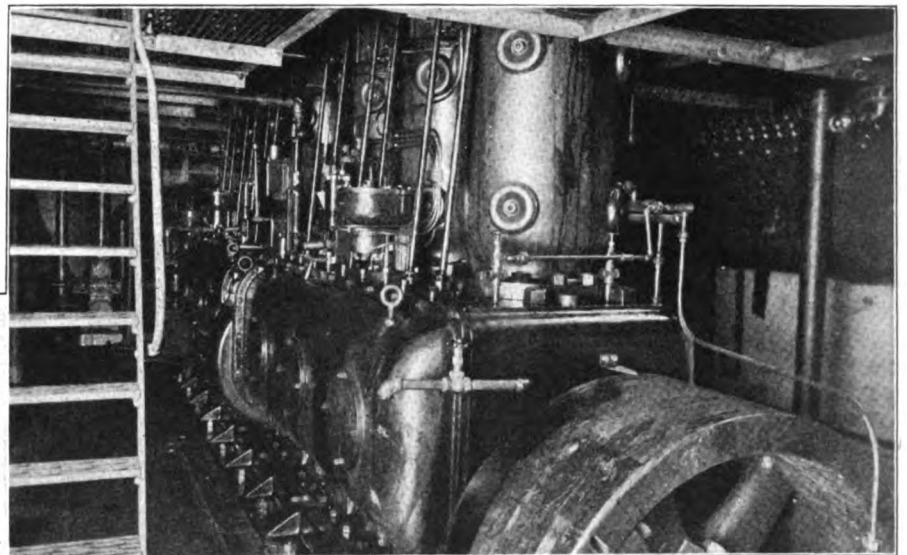
## Stockyards Use New Oil Engined Tug

A NEW oil engined, wooden hull, harbor tug has recently been placed in service in and about New York by the Jersey City Stockyards Co. This tug was especially designed for the company by Eads Johnson, 115 Broadway, New York, to incorporate features particularly desirable for the service intended. The wooden hull was built during last winter by the Crowninshield Shipbuilding Co., Fall River, Mass.

After a great deal of study, and consideration of many types of motive power including steam, Robert C. Bonham, president of the Jersey City

All of the machinery installation main and auxiliary was done by W. & A. Fletcher Co., Hoboken, N. J., as well as the construction and installation of fuel tanks and all other

steering a compressed air operated motor of Ingersoll-Rand make is used. Heating is supplied by a house type of hot water heater known as the "Arcola," a simple direct method.



RECENTLY COMPLETED WOODEN TOWBOAT FOR THE JERSEY CITY STOCKYARDS  
SINGLE POWERFUL OIL ENGINE DRIVE

Stockyards Co., finally decided upon a 400 horsepower, six cylinder, solid injection, direct reversible Ingersoll-Rand oil engine. Performance since going into service it is reported has amply justified the choice made, and no question now remains in the mind of Mr. Bonham in regard to the possible superiority of a steam engine.

parts to make a complete ready to operate job. The auxiliary air compressor, bilge and fire pump are driven by a direct connected Bates Edmonds non-reversible oil engine. The same engine by means of a belt drives a small generator giving electric lights for the entire boat without the use of storage batteries. For

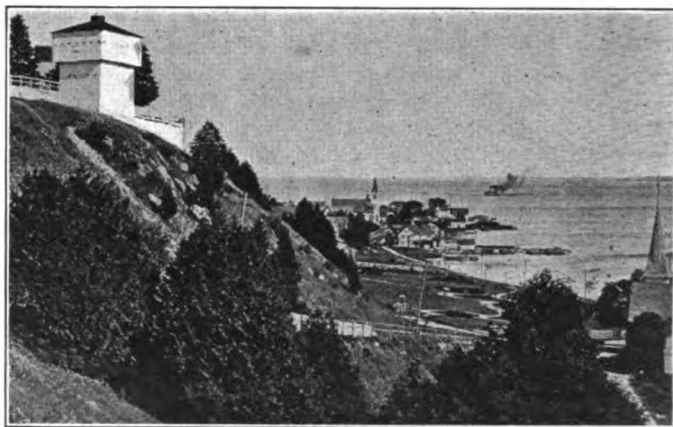
INGERSOLL-RAND OIL ENGINE OF 400  
RATED HORSEPOWER SHOWN IN-  
STALLED IN THE TOWBOAT ROB-  
ERT C. BONHAM

Simplicity, compactness and special features for harbor towing makes the Robert C. Bonham an unusually complete towboat, though stripped of all unnecessary, but almost always customary, tug superstructure. The stack, over which there was some contention, remains a very useful feature, housing the main engine and auxiliary exhausts as well as the smoke pipe from the galley range, and also as an eminently suitable location for the air whistle which is of Strombos type.

By careful planning the most has been made of the space available in the engine room, with the result that there is room to move about in.

# Fast Steamers Placed On Run Between Chicago-Detroit

**Stops at Mackinac Island and St. Ignace—  
Pass Picturesque Straights of Mackinac,  
St. Clair River and Detroit River in Daylight**



The Old Fort at Mackinac Island

**A** FAST express steamboat service between Chicago, Mackinac Island, St. Ignace and Detroit, has been established by the Detroit & Cleveland Navigation Co., with headquarters in Detroit.

The express steamers **EASTERN STATES** and **WESTERN STATES**, of the D. & C. fleet, have been placed upon the run and are operated on a schedule providing for three round trips a week. The steamers sail from the municipal pier in Chicago Mondays, Thursdays and Saturdays, arriving at Mackinac Island the next morning at 9:00 a.m., and arriving in De-

troit at 8:00 a.m. the following morning. A striking feature of the schedule is the fact that passengers may leave Chicago or Detroit Saturday afternoon, spend the week-end at Mackinac Island and return to their homes in time for business Monday morning.

The steamers **EASTERN STATES** and **WESTERN STATES** served last season on the important Detroit & Cleveland Navigation Co.'s route between Detroit and Cleveland. They are twin steamers of 3077 gross tons, with a net tonnage of 1566 tons; entire length over all 362 feet; and breadth

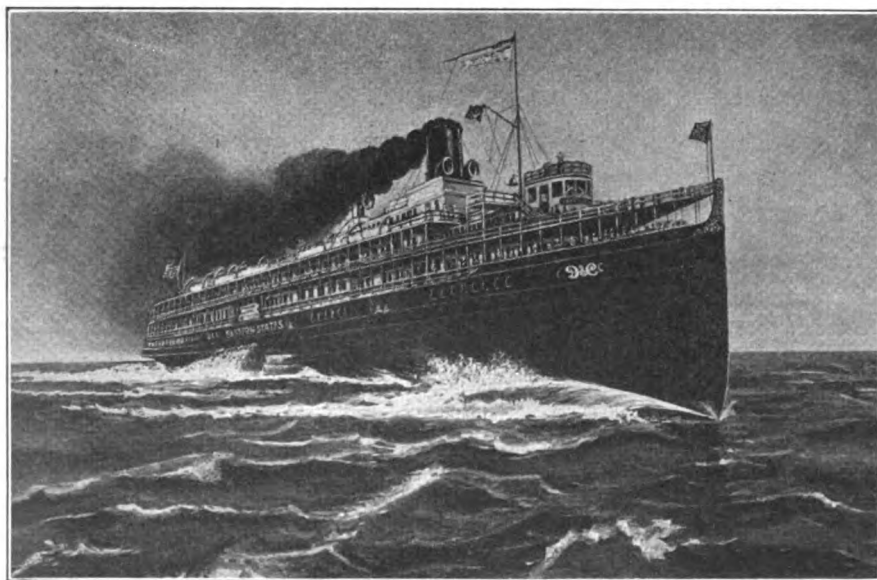
lets and baths. Many public bath rooms are provided for the free use of passengers. Each boat has sleeping accommodations for 700 passengers, and are permitted by the government to carry 1442 passengers, but on the new Chicago run only passengers who can be provided with sleeping accommodations will be carried. Each steamer can carry 55 automobiles besides considerable package freight. Only local freight will be carried during the present season. J. C. Conley has been appointed general agent of the Detroit & Cleveland Navigation Co., in Chicago. He is well-known in shipping circles as he has been in the steamboat business at Chicago for the past 22 years.

The Detroit & Cleveland Navigation Co. has operated steamboat lines on Lake Erie between Detroit and Cleveland, and between Detroit and Buffalo for over half a century. For 40 years the company operated a line between Detroit, Mackinac Island, and local ports on Lake Huron.

At the present time the Detroit & Cleveland Navigation Co. has an authorized capital stock amounting to \$10,000,000, with \$6,038,000 outstanding. Dividends aggregating \$483,040 were distributed by the company in 1924. A dividend rate of 8 per cent per annum has been maintained since the organization of the company.

The grand fleet of the Detroit & Cleveland Navigation Co. is composed of seven modern passenger steamers including the **GREATER DETROIT** and **GREATER BUFFALO**, which cost \$7,000,000 to build and which are operated for the first time this summer; **CITY OF DETROIT III**, **CITY OF CLEVELAND III**, **EASTERN STATES** and **WESTERN STATES**.

A. A. Schantz is president and general manager of the Detroit & Cleveland Navigation Co.



**STEAMER EASTERN STATES—WITH HER SISTER STEAMER WESTERN STATES NOW  
ENGAGED IN THE RUN BETWEEN DETROIT AND CHICAGO MAKING  
STOPS AT MACKINAC ISLAND AND ST. IGNACE**

troit at 8:00 a.m. the following morning. The sailings from Detroit, foot of Third avenue, are Tuesdays, Thursdays and Saturdays.

The schedule has been so arranged that the most picturesque sections en route—the Straits of Mackinac, the St.

Clair river, the St. Clair Flats and the Detroit river—can be seen in daylight. The engines develop 5000 horsepower. These steamers are combination boats carrying passengers and package freight; each has 223 staterooms and 18 parlors. Many of the staterooms are provided with toilets and the parlors have toi-



# End of Government Ownership *Will*

## Make Pap Fed Operators *Shift for Themselves* Mild Recent Activity in Selling Is Quite Encouraging

An Established Steamship Service of 18 Ships Sold to Operators—Ford's Offer for 200 Ships for Scrapping Accepted

NO ONE in authority in either the shipping board or the Emergency Fleet Corp. will go so far as to commit himself as to exactly when the government should withdraw as an operator of the merchant fleet. No enactment has been placed on the statute books by congress fixing a date for the final relinquishment of the government vessels to private operation. Therefore, it is not improbable that the government bureaus may continue their wasteful management of the important shipping industry for years, unless something happens to jar things loose in the shipping board, the Emergency Fleet Corp., or in congress.

### Stop Temporizing—Get Action

Reports have been heard within the last few days that the more aggressive sales policy adopted recently by President Palmer, of the Fleet corporation, actually means that the government shipping bureaucracy hopes to have all its vessels sold and to be out of the operating business by the end of this year. President Palmer does not say, however, that this end will be accomplished in five years.

Already more than five years have passed since congress declared in the merchant marine act its policy for a merchant marine of the best equipped and most appropriate types of vessels, "ultimately to be owned and operated privately by citizens of the United States." The government still operates several hundred of the vessels built during war time and owns most of them. Occasionally ships have been sold. But in the five years that have elapsed since congress gave voice to a policy of removing the fleet from government operation "as soon as practicable, consistent with

good business methods and the objects and purposes to be attained by this act," few outstanding sales have been made.

A short time ago, the board gave its approval to the sale of 18 of the 20 vessels of the American Export line to the Export Steamship Corp. at \$7.50 a ton. The sale provides for guaranteed operation for five years, of at least 60 round trips in a year in the established service. Negotiations for this sale were conducted by Admiral Palmer, who was recently delegated by President Coolidge to conduct sales negotiations in the future "on his own." The Export Steamship Corp. is the managing operator of the American Export Line, of the board, operating between Atlantic and Mediterranean ports. Henry Ford is starting the task of scrapping the 150 lake-type vessels and the 50 ocean-going ships he recently purchased from the Fleet corporation under its scrapping program, from which he will get about 290,000 tons of steel scrap. A few of the larger vessels will be dieselized for the Ford fleet.

### Drive Politics From Shipping Control

Outside of these ship sales, little has been done within the last five years. The Dollar interests bought the seven 502-foot "President" type combination cargo and passenger vessels several years ago, and more recently bought five of the 535-foot "President" type combination cargo and passenger ships, operated by the Pacific Mail Steamship Line for the government from San Francisco to the Orient. These have been the only outstanding sales.

Unfortunately a number of members of congress favor permanent government operation

of the shipping industry. Members of congress upholding government control of the ships naturally may be expected to criticize action by the shipping board if it actually seeks to give effect to the mandate of congress as set forth in the Jones act of 1920. Senator Duncan U. Fletcher, of Florida, is one of these, although not a special friend of the shipping board.

Despite conflicting opinions in congress, encouragement is felt that favorable consideration may be given to legislation in the coming session to wipe out the shipping board and to transfer the Fleet corporation to a marine bureau of the department of commerce. In the meantime, the shipping board will take full advantage of its prerogative in finally passing upon ship sales, negotiated by Admiral Palmer.

### Support Palmer's Aggressive Policy

It was announced by President Palmer on July 30 that he had submitted to the shipping board two offers for the American Palmetto Line, operated by the Carolina company, between South Atlantic ports and Liverpool, Manchester, Lon-

don, Bremen, Hamburg, Rotterdam and Antwerp. This company with several others, bid on the line. This was the first offer received since July 6, when Palmer announced a campaign to sell the government services, with managing operators given the preference.

President Palmer regards the Atlantic-Mediterranean service, which has just been sold, as one of the best the government had, and one that can be made to show a profit under private operation. Mayor James Rolfe, of San Francisco, in behalf of Pacific coast services operated by Swayne & Hoyt, has also been conferring with Palmer. It is believed that these services could be made the basis for successful private operation.

It is also expected by officials of the Fleet corporation, that offers of the Black Diamond Line for freight services, operated by it and Rogers & Webb between North Atlantic ports and Continental Europe, may be renewed. The lines for which bids are expected are showing comparatively small losses compared to losses of the other lines. Twenty-six separate lines are operated.

## Twin Screw Diesel Tanker Is Efficient

THE Union Oil Co. of Calif. is now operating the diesel tanker RED LINE, recently constructed at the yards of the Moore Drydock Co. in Oakland. This vessel was built especially for use in the more or less shallow waters of the rivers tributary to San Francisco bay. The principal dimensions

The vessel is built on the Isherwood system of longitudinal framing with straight stem and transom stern and has fourteen oil tanks with a combined capacity of about one hundred and fifty thousand gallons. In addition the forehold has a capacity of about 15 tons of package goods. Cofferdams separ-

with a bore of 10½ inches and a stroke of 15 inches, and are capable of driving the vessel at more than 8 knots.

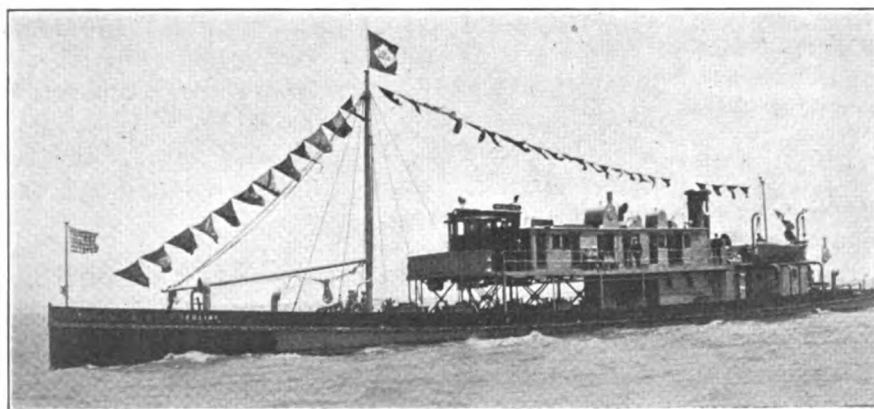
The electrical equipment consists of a Fairbanks-Morse 6 horsepower gas engine with a 16 cell storage battery and switchboard; the generator being driven by a belt drive.

All machinery and auxiliaries are located aft. The pump room is on the upper deck at the after end of the oil space and three Northern rotary pumps have been installed to handle the cargo through a six-inch pipe, at 250 gallons per minute against a pressure of 100 pounds. These pumps are operated by a Western Enterprise 100 brake horsepower diesel engine through a belt drive.

Fuel sufficient for about 135 hours of continuous running is carried in the wings of the storage space just abaft the engine room.

Other equipment consists of an Enterprise 8 horsepower double drum winch for handling cargo. A steering mechanism operating either by hand or compressed air. Twin screw, three blade, 50-inch bronze propellers have been installed.

Accommodations for the officers and crew are provided in a steel deck house on the bridge deck. The gross tonnage of the vessel is 388.95.



SHALLOW DRAFT TWIN SCREW DIESEL TANKER REDLINE, CONSTRUCTED BY THE MOORE DRY DOCK CO., OAKLAND, CALIF., FOR THE UNION OIL CO., CALIF.

of the tanker are: Length overall, 175 feet; beam molded, 36 feet, beam over fenders, 37 feet 4½ inches; depth molded, 7 feet; draft loaded, 5 feet 6 inches; camber (straight line), 6 inches in 36 feet; sheer forward, 3 feet 6 inches; and sheer aft, 1 foot 9 inches.

ate the oil cargo from the fore hold and the engine room.

For propelling machinery she has two marine type Western Enterprise full diesel solid injection engines, each delivering 165 brake horsepower at 280 revolutions per minute. They are four cylinder, four cycle engines



# Scrap Laid-up Ships—Build New

These Ships Are Obsolete—Have Outlived Their Usefulness—  
Cannot Be Economically Adapted to Modern Requirements

BY WILLIAM FRANCIS GIBBS

**W**HEN Senator Fletcher of Florida in his statement that the portion of the laid-up fleet that has been so much in the public eye recently should not be regarded as junk fit only for scrapping he is unquestionably representing a general, and rather large element of public opinion.

Of course they look like effective ships, and it did cost a lot of emergency money to build them in the Great Emergency. But the economic effectiveness of any machine cannot be judged merely by its appearance or cost of preservation in idleness. The efficiency must be judged in comparison with mechanisms in service. The economic tragedy of war is that today these ships in the scrapping bids are effective only for what can be recovered as scrap. Personally, I believe too little informative emphasis has been placed on this matter by the shipping industry, and to my mind there is no doubt that Senator Fletcher does represent a large element of critical but unjust public opinion that must be recognized more fully by the shipping interests.

There is no doubt that the American public generally is rather suspicious at the idea of this wholesale junking of ships that can float and whose superstructures look pretty much like those of any other ships that sail the seas.

Unfortunately, it is difficult for the average citizen to appreciate the necessity for building new tonnages, or planning for such building, when he thinks of the long lines of ships tied up in the Hudson river, James river and elsewhere—which, to his mind, from external appearances, are very much like the ships which are in active service. The thought of applying the acetylene torch to ships apparently sound and which but a short time ago cost millions to build, is instinctively abhorrent to the man in the street; and this resentment will reflect itself in elections. Congressmen and senators and the other officials as well will have to meet the questions.

Once let this fleet be scrapped and the public and congress be only partially or idly informed and they will

meet for years—whenever there is any attempt to get some constructive American understanding and protection of American merchant marine—the awkward questions as to why ship owners did not buy ships when they were going a-begging for a buyer, instead of allowing them to be scrapped for old iron.

Actually, of course, the majority of these idle ships are as useless for the maintenance and upbuilding of our merchant marine as percussion cap muskets of the Civil war era would be for equipping our army of today. They are one of the indus-

and let us face the problem of the future of American shipping and the goal of an American merchant marine. Other nations have their prosperous merchant marines; why not the United States? There is but one answer. And we should make it. These ships are essentially junk from an economic standpoint in the light of present and future shipping needs. But until the truth of this is convincingly manifested to the American public, enterprise will be halted, constructive planning will be handicapped, and the shipping of the future will be prejudiced to a point perilously close to disaster.

Scrap and build—but take time to explain to the people why the first is an absolute pre-requisite and the second an essential thing for their future peace and security. Once let the people visualize these two factors in their true proportions, and we can confidently count upon their hearty support.

## Determining a Business Shipping Policy

The United States chamber of commerce has started an energetic campaign to get together the best business judgment of the whole country on an American shipping policy. Meetings are scheduled at Seattle and Tacoma, Aug. 31; at Portland, Ore., Sept. 1; at San Francisco, Sept. 3-4; at Los Angeles, Sept. 5; at Salt Lake City, Sept. 9; and at Denver, Sept. 10. Ten conferences will be held to cover eleven states.

trial tragedies of the war—built when their building was a marvel of achievement in that they could be built at all. It was like building a fire engine after the fire breaks out. But we did it.

A duty rests upon us in the shipping field, therefore, to clearly educate the people as to the true status of these idle ships and of the real necessity of providing for adequate new tonnage for replacements. There must be thorough enlightenment of the public mind as to why these idle ships are unusable, and they are entitled to it.

I have listened with respect to the various schemes proposed for disposition of these ships, but most of them would cost more for the purpose to be served than would other available means. It seems, to the uninformed, cruel to junk them, but it is only one (and let us hope the last) of the wasteful tragedies of war. Let them be scrapped,

## United States Leads in Ownership of Tankers

A recent survey of the tanker ships engaged in, or available for, handling the world trade in petroleum and other oils, and molasses, made by the bureau of research, United States shipping board, indicates that on June 1, 1925, the United States ranked first in ownership of this class of vessels, with 45 per cent of the gross tonnage and 39 per cent of the total number of ships. Great Britain was a close second, however, with 36 per cent of the gross tonnage.

Country	Ships	Gross Tons
United States ....	402	2,507,854
Great Britain ....	391	2,074,086
Holland .....	44	123,848
Norway .....	42	231,934
France .....	35	164,695
Italy .....	35	145,005
Argentina .....	14	49,421
Germany .....	12	52,722
Japan .....	10	36,416
Spain .....	9	31,305
Belgium .....	7	35,063
Cuba .....	7	25,636
Other Countries..	31	140,051
Total .....	1,039	5,578,036

## D. W. Taylor as Consultant with Gibbs Bros.

Admiral D. W. Taylor has become associated with the firm of Gibbs Brothers Inc., naval architects and Marine Engineers, 1 Broadway New York City, as consultant. Admiral Taylor's career and fame are so well known that it not necessary to retell them here. The enthusiasm with which William Francis Gibbs made the announcement indicates his standing



ADMIRAL D. W. TAYLOR

Admiral Taylor, former chief constructor of the U. S. navy has become associated with Gibbs Bros., Inc., as consultant

in the profession of naval architecture. Mr. Gibbs said: "We are to be congratulated in having consummated this alliance with Admiral Taylor. No man in the world stands higher in the field of naval design and naval architecture and no man has had a more brilliant career of expert achievement and authority than has been his.

"Admiral Taylor will be associated with us as consultant and we will have the benefit of his unquestionable abilities and fine achievements in those highly scientific and technical fields of naval architecture and ship design upon which depends the efficiency and success of American shipping."

## Old Dominion Elects New Vice President

Calvin Austin, president of the Eastern Steamship Line Inc., announced, that effective Aug. 1, 1925 Mr. J. A. Coates has been elected vice president of the Old Dominion

Steamship Co. The duties of this office will be in addition to his duties as vice president of the Eastern Steamship Lines, Inc., and his status with this company will not be affected. Mr. F. H. Mickens, freight traffic manager, who was appointed assistant to the vice president at the time Mr. Coates was appointed to this office with the Eastern Steamship Lines, Inc., will have direct charge of the agency and the terminals at New York, and matters pertaining to the agency and the terminals at that port should be handled with him, pier 18 North river, New York, N. Y. Mr. Coates will be located at pier 25 North river, New York.

## Death of G. M. Bosworth C. P. Steamships' Head

George M. Bosworth, chairman of the Canadian Pacific Steamship Lines, Ltd., Montreal, died in Hyde Park hotel, London, July 26. He died a week after being operated on for appendicitis.

George Morris Bosworth was born in Ogdensburg, N. Y., in 1858 and was educated in the Ogdensburg Collegiate Institute. He entered the railroad business in 1875 as an employe of the Ogdensburg and Lake Champlain railway, of which he was appointed general freight agent six years later. Subsequently he served in an executive capacity with the National Despatch Line.

He entered the service of the Canadian Pacific in 1882 as assistant general freight agent of the Ontario and Quebec subdivision. After several subsequent promotions he was appointed vice president of the system in 1910. Six years later when the railway company established its steamship lines he resigned the vice presidency to become the chairman of the subsidiary concern.

## Swedish Shipowner Dies in Auto Accident

Dan Brostrom, president and managing director of the Swedish-American Line, was killed in an automobile accident July 24 near Halmstad, Sweden. Mrs. Brostrom, who accompanied him, and the chauffeur, escaped with minor injuries.

Mr. Brostrom, who at one time was minister of the navy, was the largest ship owner in Sweden and was considered an authority on maritime matters.

## Capt. R. D. Gatewood Made District Manager

President Palmer of the Fleet corporation announced on July 27, the appointment of Capt. R. D. Gatewood as district director for the New York district, with headquarters in New York city. Captain Gatewood assumed his new duties on Aug. 1 and in addition to serving as the district director for New York will continue as the head of the maintenance and repair division of the corporation.

This is a well deserved recognition of a firm and efficient handling of the extensive and elaborate repair and reconditioning program of the corporation. It is to be expected that henceforth all other business of the Fleet corporation in the New York district will be carried on in an honest, thorough and intelligent manner.

Captain Gatewood is a naval constructor in the United States navy and has had a wide experience during his career. After graduating from the Naval Academy in February, 1903, he spent about a year at sea and prior to his assignment to the construction corps of the navy, attended



CAPT. R. D. GATEWOOD

Captain Gatewood has been appointed district director for the New York district of the Emergency Fleet Corp.

the Massachusetts Institute of Technology, graduating in 1906.

Following graduation, he was assigned to Mare Island navy yard on shop and outside supervision work and after six years there became fleet constructor of the Atlantic fleet on the staff of the commander-in-chief. He was next assigned to the Philadelphia



navy yard in charge of all outside work, including construction of the transport HENDERSON. After serving for two years as superintendent of the Mechanical division of the Panama canal, Captain Gatewood returned to duty at the Philadelphia navy yard for about a year in charge of the construction of the two battle cruisers which were subsequently scrapped under the armament treaty. He was then called to duty with the Fleet corporation by the then chairman, Admiral Benson, as director of construction, and repairs, winding up the construction program of the corporation and organizing the repair activities. On Aug. 1, he was called upon to assume additional duties as district director for New York.

## Joins Bridgeport Brass Sales Organization

Harold Bates has recently joined the sales department of the Bridgeport Brass Co., manufacturers of condenser tubes along with many other brass products, and will be engaged with matters pertaining particularly to sales organization and research.

Mr. Bates has had considerable experience in sales and engineering work. He served with the Winchester Repeating Arms Co. for five years successively as sales engineer in charge of the development of new products, superintendent of the sales engineering department, supervisor of sales planning and later in charge of

special and jobbing sales of all new products.

He brings to the Bridgeport Brass Co., therefore, a ripened experience which will be of especial value in the working out of plans to broaden the scope of the Brass company's service to its customers.

## Joe Tynan Steps Up

Joseph J. Tyran, general manager of the Union plant of the Bethlehem Shipbuilding Corp., San Francisco, has been elected vice president of the Bethlehem Steel Co., Bethlehem, Pa., in charge of Pacific coast activities. He succeeds Leigh C. Norris, Pacific coast representative, who has resigned.

# U. S. Diesel Conversion Keeps Going

**S**TEADY progress is shown by the maintenance and repair division of the Emergency Fleet Corp., 45 Broadway, New York city, in connection with the Diesel conversion program of the shipping board. Since the report published in the August issue of MARINE REVIEW, the following bids have been received and contracts placed for auxiliaries and other parts for the first 14 vessels to be converted.

As a result of bids opened June 18 for furnishing pumps to outfit 14 vessels, contracts have been awarded to Kinney Mfg. Co., on item 2 — oil pumps for four ships — eight pumps, at \$5616, and on item 12 — fuel oil pumps for four ships — four pumps, at \$4656, or a total of \$10,272. The Nash Engineering Co. received the remainder and the bulk of the pump order, items 3 and 4 combined — circulating water, for 14 ships — 28 pumps, at \$24,528; item 5 — piston cooling for two ships — 4 pumps at \$2780; item 6 — fresh water cooling, for 2 ships — 2 pumps at \$1752; item 7 — fire and bilge for 14 ships — 14 pumps at \$12,880; item 8 — engine room bilge for 14 ships — 14 pumps at \$9730; item 9 — fresh water and salt water sanitary for 14 ships — 28 pumps at \$8764; spares for water pumps for 14 ships at \$3810. The total amount of the entire order to the Nash company is \$64,244.80.

Specifications have been issued and bids received for furnishing motors for under deck auxiliaries. On item 1, 30 — thirty horsepower motors the bids were, General Electric Co. \$11,700, Electro Dynamic Co., \$10,200, Westinghouse Elec. & Mfg. Co., \$12,-

630, Diehl Manufacturing Co., \$15,300. On items 2 and 3 respectively for 18 — twenty horsepower motors and for 68 — 7½ horsepower motors and in the order of bidders listed for item 1, the bids were \$5580, \$13,736 — \$6030, \$14,144 — \$6240, \$14,786 — \$6660, \$13,260. Engberg Elec. & Mfg. Co. submitted a bid on item 3 only, for \$11,764. No award has been made under this opening up to the time of writing.

On July 29 specifications were issued for furnishing shafts, coupling bolts, nuts and centering plates, to be used on the first two vessels to be converted. Bids have been received and were opened on Aug. 7. The prices asked for one and two shafts respectively are, Bethlehem Steel Co., \$9375, \$18,750, Erie Forge Co. for two shafts \$21,880, Federal Shipbuilding & Drydock Co., \$9000, \$18,000, Midvale Co., \$12,475, \$24,950, Newport News Shipbuilding & Drydock Co., \$8300, \$16,300, Reading Iron Co., \$8887.50, \$17,775 and the Sun Shipbuilding & Drydock Co., \$10,674, \$21,348. The award will undoubtedly go to the low bidder Newport News Shipbuilding & Drydock Co.

Bids have been received for furnishing heating boilers for 14 vessels as per specifications issued July 23, and were opened Aug. 10. The American Radiator Co. want \$887.67 each, for 14 cast iron sectional heating boilers. The Newport News Shipbuilding & Drydock Co. want \$2700 for the first and \$1900 for each additional and \$2600 for the first and \$1775 for each additional for 14 steel vertical fire tube boilers, depending upon whether a corrugated or plain

fire box is desired. No award has yet been made.

Only two companies submitted bids on specifications issued Aug. 3 for furnishing 14 torsion meters. The bids opened Aug. 11, were from the McNab Co., Bridgeport, Conn., one torsion meter at \$956.45, seven at \$901 each and fourteen at \$856.15 each, and from Kelvin & Wilfred O. White Co., Boston, fourteen at \$1758 each. No award has yet been made.

Additional specifications have been issued as follows: For furnishing 14 emergency air compressor units to be opened Aug. 21. For furnishing four water and twenty-nine oil coolers on which bids were opened Aug. 14. For furnishing 14 switch and control boards on which bids were opened Aug. 24.

The specifications for the actual installation of the Diesel engines in the first two vessels to be converted, it was expected would be put out late in Aug. Of the vessels to be converted the first two will be selected from the S. S. SEMINOLE located in New York, and the S. S. TAMPA and S. S. UNICOL now located at Norfolk. The engines to be installed in these two first vessels will be those manufactured by the Worthington Pump & Machinery Corp. at the Snow-Holly plant at Buffalo.

The Dollar Steamship Co. has appointed Capt. W. D. L. Gilboy port captain for them at New York to succeed Capt. F. W. Cullum, who recently resigned. Capt. Gilboy formerly was connected with the United States shipping board at San Francisco.

# From the Old Log Book

Stray Items About the Great Lakes, Atlantic, Pacific and Gulf Coasts and Inland Rivers from MARINE REVIEW Files of 10, 20, 30 and 40 Years Ago

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SEPTEMBER, 1885

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IS THERE nothing new under the sun? An account was given 40 years ago of a new electric automatic steering gear attachment, the invention of Mr. C. H. Washburn. The device, the story goes on, demonstrated in a public trial, would secure practical and popular favor when it had become known. It consisted of a cylinder worked by compressed air with valves also operated by compressed air, but the valves of which in turn were operated by an electric current through magnets.

The electric current was controlled by the movements of an attachment to the compass so that when the ship veered from the course she was set on, the helm was automatically moved by means of the electrically controlled valves.

Today the automatic steerer as developed by Sperry to operate in conjunction with the gyroscopic compass is a recognized success.

\* \* \*

Under the heading of "No Punishment for Casting Away a Vessel," an account is given of a most peculiar jury trial then just ended in Boston. A shipmaster and others were charged with casting away the brig *Mary Celeste*, of Boston, while on a voyage from that port to Hayti, with the intention of defrauding the underwriters. The jury disagreed, it came out after the trial, not because of difference of opinion as to the main charges but because they were afraid of the penalty imposed by the law for the crime charged. The penalty was death. So had a verdict of guilty been brought in the judge would have had no alternative but to sentence the shipmaster to be hanged. And this was only 40 years ago.

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SEPTEMBER, 1895

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IN VIEW of the concern felt in Britain at the present time about German competition in shipbuilding and particularly in the ability of the German firms to secure orders from British companies, it is interesting to

note as recorded in MARINE REVIEW 30 years ago that Harland & Wolff, Belfast, Ireland, received an order at that time for a 20,000-ton twin screw passenger liner for the Hamburg American Packet Co. The bid of the Harland company, the article goes on to say, was very much below the prices asked by the German builders and the time for completion was ten months as against nineteen.

\* \* \*

*As it does not seem likely that British wages were materially if any lower than German wages, is it possible that the great difference in price and time represented the superiority in skill of the British over the German shipbuilders and that this difference aided possibly by lower wages and longer hours has been so much more than made up by the Germans that even British shipowners as a matter of good business in getting the greatest return on their expenditures now feel compelled to place new orders with them?*

\* \* \*

The fight on the Chicago drainage canal is of long standing and so far the honors seem to rest mostly with Chicago as she still has her drainage canal and does not seem to be very quickly taking any steps to give it up. MARINE REVIEW 30 years ago called attention to the significance of the transfer from the lake district to Portland, Ore. of Major Ruffner of the United States engineer corps, who had been very earnest in declaring that the drainage canal would lower lake levels.

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SEPTEMBER, 1905

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WHEN Harvey D. Goulder acted as toastmaster at the luncheon following the launching of the lake bulk freighter *JOHN STANTON* at the Lorain yard of the American Shipbuilding Co. twenty years ago, he recalled that he could well remember when the *JOSEPH S. FAY* came out in 1871. That is now 54 years ago and Harvey D. Goulder is still in active harness as counsel for the Lake Carriers' association and in law practice.

\* \* \*

In his remarks addressed to the

consulting board of engineers on the Isthmian canal commission, recorded in the MARINE REVIEW, 1905, it is evident that President Roosevelt had an open mind as to the type of canal best suited to the conditions existing. He said in conclusion that he wanted their best judgment in choosing among the various plans for a comparatively high multi lock canal, for a lower level with fewer locks, and for a sea level canal. With characteristic desire for action he urged as great expedition in coming to a decision as was compatible with thoroughness. Maybe some day the present canal will be changed to a sea level canal. In the meantime traffic through the canal in great volume is well served by its present facilities.

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SEPTEMBER, 1915

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AN ACCOUNT is given of the horrible Eastland disaster in which 1000 persons lost their lives, as that unstable passenger boat overturned at her dock at 7:30 a.m. on July 24, 1915. The costly lesson learned at so great a sacrifice fortunately has not gone unheeded. Inspection in the most careful manner supplemented by an inclining experiment is now carried out on every vessel applying for a passenger certificate. The recently completed passenger excursion boat *GOOD TIME* of the Cleveland and Buffalo Transit Co. was inclined with the greatest possible care.

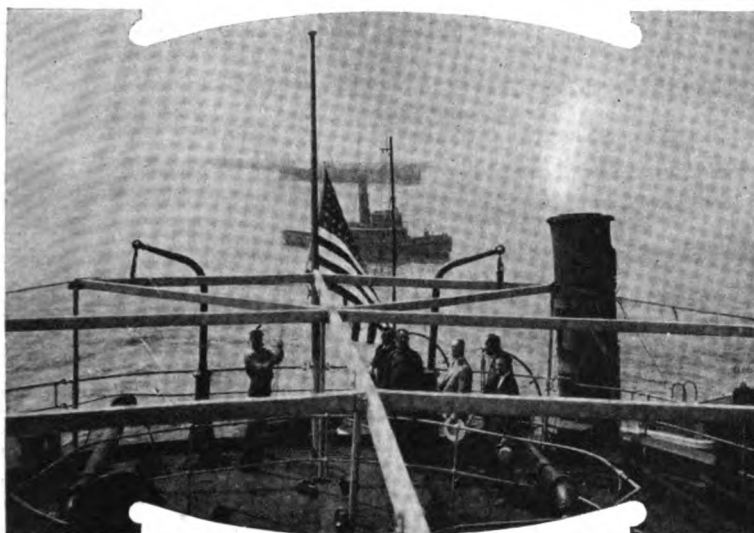
\* \* \*

It would hardly seem necessary to build up a nation wide sentiment to save the old navy frigate *Constitution* now lying at the Charlestown navy yard in Boston. The money needed to make repairs is to be raised by a campaign among the school children of the country. One of the best results of this effort to save Old Ironsides will be to rekindle again let us hope, a pride in the seamanship that made the history of this old vessel so famous.

MARINE REVIEW, August, 1915, published a picture showing the *Constitution* as she looked high and dry on shore in the navy yard at Portsmouth, N. H., May 27, 1858, where she was then undergoing repairs.



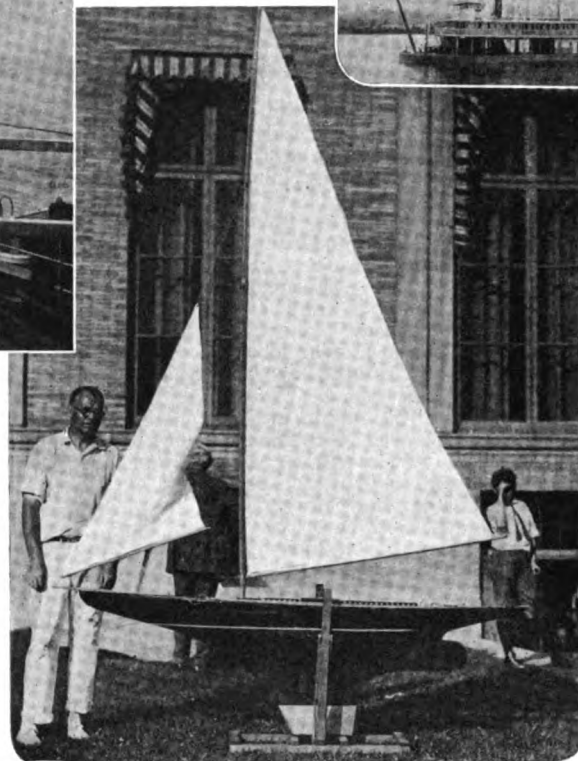
# Latest Marine News in Pictures



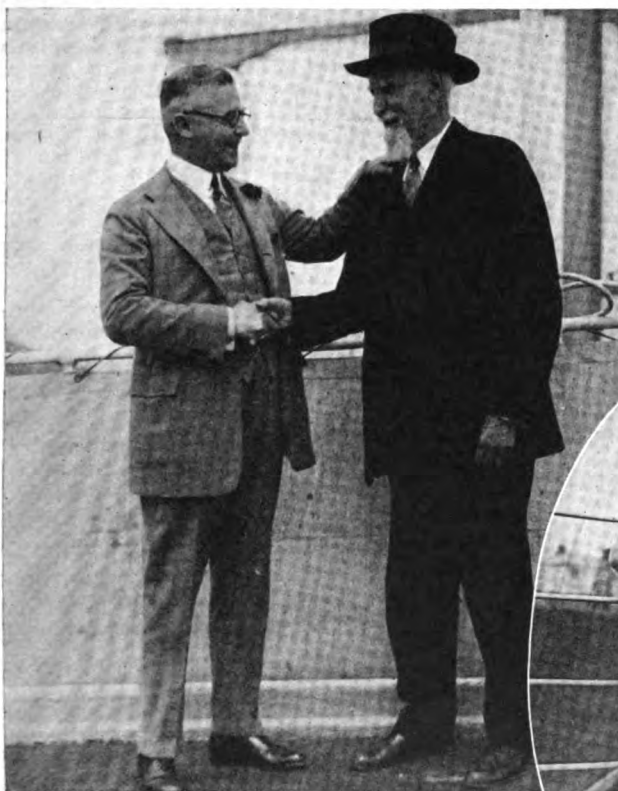
The tanker Montrolite returns to United States registry

John Black Jr. who won a cup for model boats on the Frog pond, Boston Common 24 years ago, again wins the cup in a race on the Charles river basin.

U. S. Eng. Snagboat Yuba



Gloria Etter, San Francisco athlete, got in a daily swim during 112 days of the round world voyage of the President Monroe.



J. Harry Philbin, manager sales U. S. S. B. and Capt. Robert Dollar on board the Pres. Lincoln, the first of the five trans-Pacific liners.



S. S. America of the U. S. Lines leaving her dock in New York on a recent voyage to England



S. O. Co. of Calif., buys tanker Montrolite and re-enters her in U. S. Registry at the Morse D. Dock



# Late Decisions in Maritime Law

## Legal Tips for Shipowners and Officers

Specially Compiled for Marine Review

By Harry Bowne Skillman

Attorney at Law

IT IS well settled that, after a vessel has been arrested, unless the arrest is colorable, no maritime liens can arise against her. This necessarily follows on principle. The ship is in the custody of the court, and the court alone can pledge her upon such a lien; there must be some one authorized to create consensual liens. The marshal cannot, and obviously the owner cannot." Arrest of a vessel while using a pier does not terminate liability of the owner for wharfage under a contract with the owner of the pier, which continues as though the vessel was not under arrest, and the pier owner will be required to apply a sum paid under the contract to payment of wharfage as it accrues, at the contract rate, until exhausted after which the liability is that of the lienors who caused the arrest.—POZNAN, 297 *Federal Reporter* 345.

\* \* \*

Under section 4530 of the United States Revised Statutes, as amended, demand for half wages must be made in good faith and while the seaman is still serving the vessel, and the penalty for waiting time under section 4529 cannot be recovered where the seaman, prior to the demand for half wages, deserts the vessel, nor where the master has not had a reasonable time to comply with the demand.—TAIROA, 297 *Federal Reporter* 449.

\* \* \*

A ship is liable for damages caused by negligence stowage, notwithstanding an exception in the bill of lading exempting the ship from responsibility for damage caused by other goods, and proof that cork, while on board ship, in some way unexplained by direct evidence, was wet and injured by oil, warrants the inference that it was negligently stowed comparatively near the oil.—C. LOPEZ Y LOPEZ, 297 *Federal Reporter* 457.

\* \* \*

In the case of MULLIGAN No. 1, 297 *Federal Reporter* 633, the court said that persons largely engaged in towing of vessels without motive power of their own are bound to take advantage of the weather bureau which the government has established, and to advise their masters of what weather is to be expected, and to require them to look out for warning signals. It was held that a tug, going out to sea with two dumping barges, was liable for a collision between the barges, while turning to return to port because of a gale, warning of which was given by signals of the weather bureau.

\* \* \*

A steamship which in a dense fog

was outside the channel and on known anchorage grounds, and proceeding at such speed that she could not be stopped on sighting an anchored vessel in time to avoid collision, was held, in the case of CANONOVA, 297 *Federal Reporter* 658, solely in fault for collision with an anchored schooner which was not chargeable with fault of negligence. It was said in the same case that where a moving vessel comes into collision with one at anchor, in a fog, the presumption is against the moving vessel, and she must be held solely in fault where there is no evidence of negligence on the part of the anchored vessel.

\* \* \*

If a departure from a navigation rule is proposed by one vessel, and consented to by the other, the former is justified in assuming that the other understands, and will govern herself accordingly; but the vessel which is required to keep her course cannot be compelled to depart from it at the instance of the other, and to justify a departure the positive assent of the other vessel, indicated by an interchange of signals, is always necessary; failure of a steamship to keep a careful lookout, or to hear and answer signals from a vessel on a crossing course, was not a contributing cause to a collision between them, where she was the privileged vessel and required by the rules, in the absence of agreement to the contrary, to keep her course and speed, which she did.—NORFOLK, 297 *Federal Reporter* 251.

\* \* \*

"The bill of lading is the shipper's receipt and contract of carriage. The freight engagement is the shipper's agreement to furnish cargo."—WALKER-ROSS, Inc. v. Dodwell & Co., Ltd., 297 *Federal Reporter* 257.

\* \* \*

There was no unjustifiable deviation, it was held in the case of ROSALIE HULL, 296 *Federal Reporter* 938, where the progress of a wooden schooner was so impeded by adverse winds, or no wind at all, that she was forced to put into port to take on fresh meat, and as a precautionary measure the sails were restitched, which delayed the voyage about nine days.

\* \* \*

It was decided in the case of ROSALIE MAHONEY, 297 *Federal Reporter* 294, that where libellant was employed without contract to repair a vessel at a time when wages were high, work abundant, and union rules prohibiting workmen of one class from doing any work of another class were rigidly enforced, and the owner made it an imperative requirement that the work be completed by a certain date, which

necessitated night work at double time and made more or less waiting by one class of workmen for completion of work of another class unavoidable, the owner cannot avoid liability for the labor actually employed and paid for in good faith by showing that under normal conditions the charge would have been extravagant and unreasonable.

\* \* \*

Act of congress of Dec. 26, 1920, providing that "alien seamen," found on arrival in ports of the United States to be afflicted with certain diseases, shall be placed in hospitals and treated at the expense of owner, consignee, or master of the vessel, as no application to citizens of other countries employed on United States ships, it was decided in the case of New York and Cuba Mail Steamship Co. v. United States, 297 *Federal Reporter* 158, and applies only to seamen of foreign ships; seamen are regarded as of the nationality of the ship on which they are employed; they are not "immigrants," and the immigration laws do not apply to them, in the absence of express provisions to that effect.

\* \* \*

The water in slips between piers extending into a navigable channel is a part of the "navigable channel," within the meaning of section 15 of the act of March 3, 1899, requiring the marking of wrecks sunk in a navigable channel, it was decided in the case of National Forwarding Co. v. Payne, 297 *Federal Reporter* 663. It was further held that independently of statute it is the duty of owner to mark a submerged wreck, which is an obstruction to navigation, and that placing of a small red flag on the end of a pier was insufficient to mark the position of a boat sunk in the adjoining slip.

\* \* \*

Where the master of a vessel executed an order notify bill of lading presented by shipper, who explained that the production of the bill of lading would be necessary before the cargo could be released, he acted within the scope of his authority, and the agreement was binding on the ship as a maritime contract to safely transport and deliver the cargo, subject to a maritime lien for carrying charges, and gave both shipper and ship rights and remedies in rem.—NIAGARA, 297 *Federal Reporter* 667.

\* \* \*

A general agent for a steamship company is not entitled to a maritime lien for advances and disbursements made for one of its ships.—HOXIE, 297 *Federal Reporter* 189.



# Equipment Used Afloat, Ashore

Process for Seasoning Rotors—Electric-Hydraulic Steering Gear—Connector  
Improves Ship Log—New Long Stroke Air Drill—Steel Switchboards

**F**OR large turbines to operate with steam at a temperature of 700 degrees F. or higher, the Westinghouse Electric and Mfg. Co. has introduced a special treatment to bring about "seasoning" of the rotor.

After completing the manufacture and installation of blading, the rotor is balanced accurately in a dynamic balancing machine. It is then revolved at slow speed in a suitable, tight casing by means of an external small turbine and is heated by means of steam superheated to about 800 degrees F., which is admitted into the casing at a pressure slightly higher than atmospheric. This is continued until the rotor is heated thoroughly to

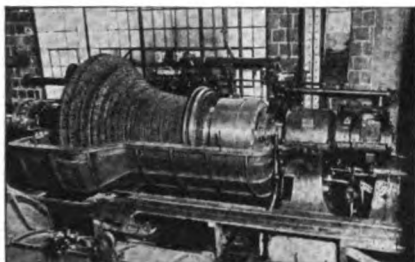
slight readjustment of the blade fastenings.

This method is regarded as much more effective in insuring continued excellence of balance than that of operating the turbine in its own casing under steam.

## Powerful Steering Gear for Airplane Carrier

An interesting and important event took place in the shops of the American Engineering Co., Philadelphia, on Aug. 3. The steering gear that is to handle the rudder on the new airplane carrier SARATOGA was tested on that date before a large assembly of naval architects, shipbuilders and officers of the navy. The test as reported by the makers proved a success in every way and those present were highly gratified at the results.

draulic type. As can be seen from the accompanying illustration there are four sets of double ended rams 24 inches in diameter with their hydraulic cylinders. Each pair of sets handle one of the two links which run aft to the rudder. There are two electric-hydraulic driving units so arranged that either may be used selectively. A similar scheme has been worked out on the pilot motor control from the various steering stations and provision is made for a rapid change-over from one unit to the other. Some idea of the size of the gear may be obtained when it is considered that it covers about half of one of the large bays of the shop, and weighs approximately 110 tons. It is so powerful that it can deliver a twisting moment on the rudder post of 70,000,000 inch pounds. This gear is exactly similar to one designed and



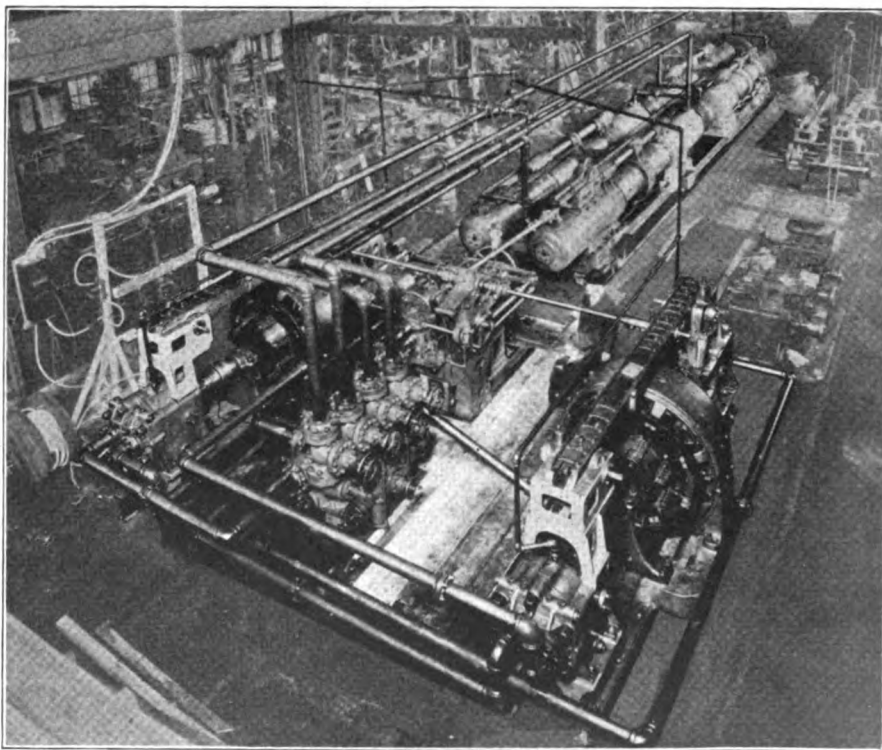
A SPECIAL CHAMBER DESIGNED FOR SEASONING TURBINE ROTORS

an average temperature of about 600 degrees F.

Upon reaching this temperature, the heating steam is shut off. The casing is then quickly evacuated and the rotor is revolved at a speed 20 per cent above its normal operating speed, and maintained at that speed for approximately 20 minutes. The speed is then reduced. The cover is removed, and the rotor is kept revolving slowly until it has cooled to approximately room temperature.

Then the rotors balance is again checked in the dynamic machine. The amount of change in balance is the indication of the sufficiency of the seasoning. If the change is greater than a specified amount the seasoning operation is repeated.

It has been learned definitely that, during the first operation at 20 per cent overspeed accompanied by heating the rotor with steam, there is likely to be a slight flow of material as a result of the seasoning which makes some change in the balance. This undoubtedly is caused partially by a



ELECTRO-HYDRAULIC GEAR FOR THE AIRPLANE CARRIER SARATOGA READY FOR TEST IN THE SHOPS OF THE AMERICAN ENGINEERING CO., PHILADELPHIA—THIS MAMMOTH GEAR RESPONDS TO THE SIMPLEST CONTROLS

The SARATOGA is being built at the New York Shipbuilding Co., Camden, N. J., and was launched on April 7, 1925.

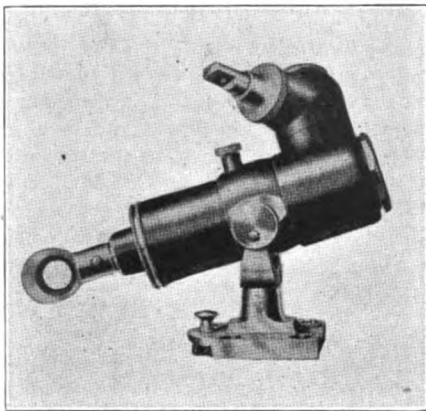
This gear is said to be the largest ever built and is of the electro-hy-

built by the same company and shipped several months ago for the airplane carrier LEXINGTON building at the Fore River plant of the Bethlehem Shipbuilding Corp. Both vessels are 895 feet long, and the specifica-

tions call for a speed of 31 knots. Simplification of control proved to be a considerable engineering problem but was solved in such a manner that the units are not only compact in construction, but easy for the average engineering staff to grasp in principle.

### Ship-Log Is Improved by Use of Connector

Accurate determination of a vessel's speed has always been of the utmost importance because of the use made of this knowledge as a check (and sometimes as the only means) in fixing the ship's position. Dead reckoning may be excellent naviga-



SHIP-LOG CONNECTOR—THE AERIAL WIRE TO THE REGISTER AND THE LINE TO THE ROTATOR ARE CONNECTED TO THE SMALLER AND LARGER CHAMBERS RESPECTIVELY

tion with a good log and a carefully adjusted compass. One of the well known types of ships logs is a rotator attached to a line towed behind the vessel, the recording device fastened to the other end of the line being as a rule secured on the rail in the stern quarter. The speed of rotation of the rotator of course varies with the rapidity with which it is towed through the water, and by proper calibration, making due allowances, an accurate record of speed is obtained.

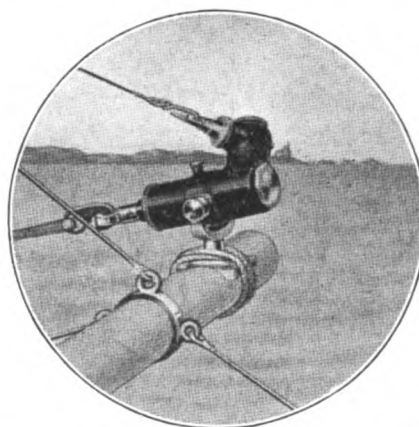
The inconvenience of a location so far away from the bridge and the use of the log in the more or less broken water aft of the propellers has been overcome by Thomas Walker & Son, Ltd., ship instrument makers, 58 Oxford street, Birmingham, England, in the perfection of a patented connector for the ordinary ship log. The accompanying illustrations show the general appearance and method of installation.

A boom 20 to 25 feet in length is located at any convenient place well forward, preferably under or near the

bridge and is made fast by a goose neck stepped in the rail, while the outboard end is supported by wire guys. Near the end of this boom the connector mounted on the regular type of shoe is properly secured and lashed. The revolutions of the rotator are transmitted through the connector to the log register on the bridge by a light aerial wire to which a spring is attached to ensure even tension. In adjusting the length of the aerial there should be little tension but at the same time no slack for best operation. It is important also to align the eye in the connector with the register spindle. The log register is usually mounted on a bracket fixed to the bridge at a level of the hand rail. For convenience in hauling in the rotator a tripping line is used with a bulls eye attached which rides on the log line.

To use the log, attach the governor wheel with the big log line and rotator to the large eye in the connector and the spring and hook of the aerial to the eye of the log register on the bridge. The other end of the aerial is lowered from the bridge and attached to the small eye of the connector. After this, the boom is swung out, the guys are made fast, the rotator is thrown well overboard and the line is paid out. In housing the log it is important to avoid kinking the wire of the aerial when coiling it up, and care should be taken to keep the vanes of the rotator from damage due to striking the sides of the ship, so that the accuracy of the log may not be affected.

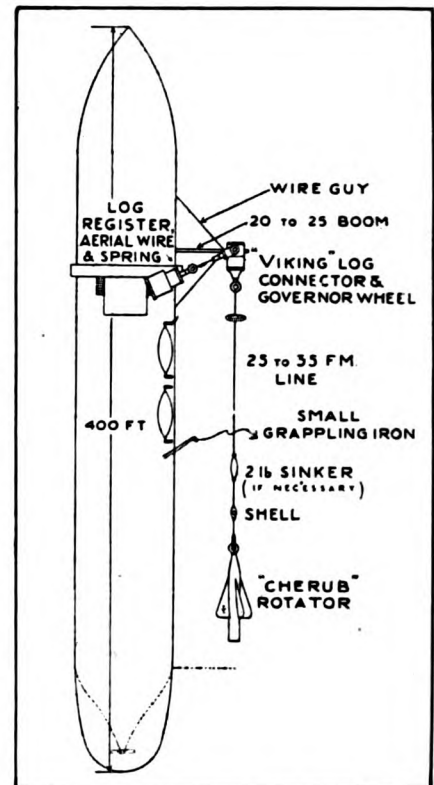
Length of line depends upon the speed of the vessel and the height



SHIP-LOG CONNECTOR INSTALLED ON THE END OF A BOOM AND HOOKED UP TO THE REGISTER AND TO THE ROTATOR

of the boom above the water. The higher the speed the longer the line and the nearer the boom to the water, the shorter the line. Not

less than 30 fathoms of line should be used for a ship that has a speed of 12 knots. If the rotator breaks the surface a greater length of line must be used or it can be



DIAGRAMMATIC PLAN SHOWING INSTALLATION OF SHIP-LOG WITH CONNECTOR

weighted by using a sinker. Sometimes a copper cored line is used to obtain the same results.

Oiling of the connector in a proper manner is essential for good operation. A solidified oil should be used with occasionally a little ordinary ship log oil added from time to time. One filling of solidified oil ought to last for seven days or more. The dirty oil should be removed from time to time and the connector thoroughly cleaned to keep it in good working condition. A paraffin base oil should never be used.

The ship log connector carried as described on the end of a boom near the bridge makes it possible to tow the rotator ahead and far removed from the propellers—along the side of the ship and the readings can be made directly by the officer on watch by simply looking at the register located on the bridge. He can do this while taking his land mark bearings without loss of time getting coincident readings. It is also possible for him to see at all times that the rotator is functioning properly and that it is not fouled. The rotator



can also be readily housed or taken inboard at any time. There is no danger of its getting caught in the propeller when stopping or going astern nor is it liable to damage by other vessels passing close under the stern. An additional advantage is that the connector can be set at any angle and may therefore be located either in way of, forward or aft of the bridge.

## Long Stroke Air Drill With Speed Governor

A new long stroke pneumatic drill recently developed by Ingersoll-Rand Co., has several interesting features. It is a four cylinder drill in both reversible and non reversible sizes. Speed is closely regulated by a governor and is automatically limited after it has passed the point of maximum horsepower. Racing and extra consumption of air is thus prevented and the wear and tear, excessive friction heat and consequent lubrication troubles, of high free speeds are largely eliminated. Speed control also prevents the burning of drills, reamers and taps.

Cylinder liners are of special steel fitted into the steel casing and are easily removable when it is necessary to renew them. In this way the cylinder case proper lasts indefinitely. With this construction it is practically impossible to dent a cylinder causing the piston to stick since a space between the cylinder liner and the case walls intervenes. Crank pins are fitted with sleeves secured to them so that the wear takes place on the sleeves instead of the crank pins proper, and the sleeves can be renewed when worn.

The crank pins are lubricated from the inside as well as from the outside. All other drills have been lubricated by the crank shaft supposedly



NEW LONG STROKE PNEUMATIC DRILL WITH SPEED GOVERNOR

turning in grease in the crank case. But it has been found that centrifugal force throws the grease away with the result that there has been insufficient lubrication. In the new method by a combination of venting the case and with holes drilled through the crank as

in automobile engines, the crank pin bearings are assured of proper lubrication.

The main valve is of large diameter and has long bearing surfaces, is air balanced to avoid wear on its bushing and is gear timed thus doing away with intricate valve mechanisms, toggles levers and cranks. Gearing is of helical type which gives a stronger construction and smoother operation than straight spur teeth. The crank pinion is renewable independently of the crank and therefore if damaged can be replaced without renewing the complete crank shaft.

One piece drop forgings are used for the connecting rods, eliminating straps, toggles, bolts or pins to adjust in cramped quarters. The crank shaft construction makes possible the use of solid end connecting rods and renewable crank pin sleeves. It is accurately counterbalanced to insure smooth operation. Assembly of the complete crank shaft with pistons and connecting rods can be made outside of the case, and then inserted in place. This saves labor and time and the proper assembly of the parts is thus assured.

## New Steel Switchboard Proves Practical

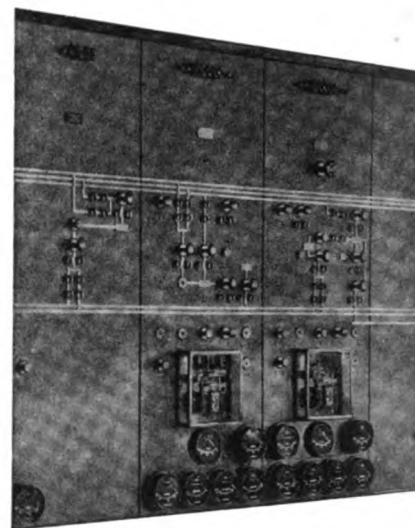
A new type of switchboard, constructed of "stretcher level sheet steel" that may be used advantageously in power, railway industrial and marine installations has been designed by the Westinghouse Electric and Mfg. Co. This new type of switchboard is said to be light, substantial, sturdy and easily erected.

The introduction of steel switchboards has been a gradual one since 1915 when it was found that the ordinary slate and marble boards would not stand up under severe operating conditions. They were brittle and easily broken and were subject to stain by oil which marred the appearance of the board. In addition they were heavy and cumbersome.

For some time stretcher level steel switchboards have been used on small installations in a more or less experimental way and have proved successful, so that they are now being installed on larger projects. The outstanding features of this new type are its lightness, substantial nature, appearance and inexpensiveness. The erection and maintenance costs are lower than those of the slate and marble boards. The erection, in addition to being cheaper, is simpler since the

framework is an integral part of the panels.

The steel panels are given a baked enamel finish similar to that used in the auto industry. They thus present



NEW TYPE OF STEEL PANELLED SWITCHBOARD SUITABLE FOR MARINE WORK

a most pleasing appearance and in addition are impervious to moisture and easily resist the corroding action of salt sea air.

The hull of what will be the largest steamer of the fleet operated by the Carnegie Steel Co. in the Pittsburgh district, was launched this week at the ways of the American Bridge Co. The boat is designed for the Pittsburgh and New Orleans trade. It has an overall length of 200 feet and is 40 feet wide and 6.6 feet deep in the center. The craft is expected to be placed in service within a few months.

## Recent Sales of Ships

The president of the Fleet corporation announced recently the following sale of tonnage:

**BARTHOLOMEW**, lake type steel freighter, 4155 deadweight tons, 2598 gross tons, for \$25,000 in cash to the Eastern Steamship Line, Inc., Boston.

**LAKE FLORAVISTA**, lake type steel freighter, 4145 deadweight tons, 2606 gross tons, for \$25,000 in cash to the Eastern Steamship Line, Inc., Boston.

Both of the above lakings were sold with the understanding in the form of a contract supported by bond to perform certain alterations and betterments under approved plans and specifications.

**TUGS**, seven steel ocean-going coal burning tugs, for \$42,500 each to Henry Ford, Detroit. It is understood this figure was finally agreed upon after negotiations on the rejection of a bid of \$40,000 each.

**A 6000-TON WOODEN DRYDOCK**, located at Jacksonville, Fla., for \$30,000 to the Virgin Island Dock & Engine Works, St. Thomas, V. I.

**LAKE WINTHROP**, lake type steel freighter, 3310 dead weight tons, 2150 gross tons, for \$33,000 to the Bull Insular S. S. Co., 40 West St., New York City. The purchase of the LAKE WINTHROP by the Bull Insular S. S. Co. was a consideration involved in a settlement



of claims growing out of a former purchase of tonnage by that company.

LAKE GILPIN, LAKE FARRE, LAKE ANOWA, and LAKE GETANO, lake type steel freighters of 2600 gross tons each and all sister ships, for a figure reported to be \$60,000 to The Dollar Steamship Co. All of these vessels were tied up in the Orient; two at Hong Kong and two at the Ilongapo naval station in the Philippines. It is understood that they will be used as a part of the feeder service of the company in the Orient.

PRESIDENT FILLMORE, steel passenger steamer of 9699 gross tons, built in 1899, sold to American owners for about \$65,000. It is expected that the PRESIDENT FILLMORE will be converted into a refrigerated steamer.

SUSQUEHANNA, steel passenger steamer of 9699 gross tons, built in 1899, sold to American owners for \$85,000 and it is said will be converted into a refrigerated steamer.

## American Palmetto Line Sold to Carolina Co.

Announcement has been made by the United States shipping board that the bid of the Carolina company of Charleston involving \$270,000 for the six vessels comprising the American Palmetto line, has been accepted.

The names of the six ships involved in the transaction are, MAGMERIC, COLDWATER, TULSA, SHICKSHINNY, SUNDANCE, and probably the SACANDAGA. These six and the MINNEQUA comprise the American Palmetto Line which the Carolina company has operated several months for the shipping board. Save for the SHICKSHINNY, which is at Jacksonville, and the COLDWATER, which is en route to Wilmington, all are at Charleston. A few years ago the Carolina company purchased the S. S. PINELLAS from the board and changed her name to CAROLINAS.

The company has in mind, although it has not been definitely decided, renaming the ships, in a manner befitting their new status. They may be named after the port cities in this section—Wilmington, Charleston, Savannah, Brunswick and Jacksonville.

## American Export Lines Sold to Operators

On Aug. 14 the Emergency Fleet Corp. received three bids each, for the sale of the American Export Lines, the American Diamond Line and the American Yankee Line, all engaged in freight services between the North Atlantic coast and European ports.

Of the three the American Export Lines, operated by the Export Steamship Corp., New York, is the largest. This line has 20 freighters ranging in tonnage from 7500 to 8600, sailing from New York, Philadelphia and Baltimore to Mediterranean and Black Sea ports. Next come the American

Diamond Line operating 12 vessels from New York, Philadelphia, Baltimore and Norfolk to Antwerp and Rotterdam. The third in size, the American Yankee Line runs six vessels from Philadelphia, Baltimore, Boston and Norfolk to German ports. All three of the present operators were among the bidders.

As a result of these bids the announcement was made by Chairman O'Connor on Aug. 18 that the shipping board had approved the sale of the American Export Lines to the present operators, the Export Steamship Corp., at \$7.50 per ton for 18 vessels, with guaranteed operation for a period of five years. In commenting on the sale Chairman O'Connor said:

"If foreign owners start a rate war against American buyers of shipping lines recently sold by the shipping board with the idea of putting the American ships out of business, the shipping board will immediately take these lines back and operate them until congress meets and considers the general question of protecting American ships under private operation."

## Ford's Bid Accepted—Gets 200 Ships

Chairman O'Connor announced on Aug. 4, that the board had formally accepted the cash bid of Henry Ford of Detroit of \$1,706,000 for 200 steel vessels to be dismantled and scrapped, including all engines, boilers and auxiliaries. The next highest bid received for these vessels was \$1,370,000, which gave the right to the bidder to resell the engines, boilers and auxiliaries.

When the 200 shipping board vessels sold to Ford for scrapping are actually delivered to the control of the Ford Motor Co. it will not be long before action is taken to begin scrapping. All of those of a size to allow passing through the Welland canal, the limiting link between the Atlantic and the Great Lakes, will probably be towed to Detroit and scrapped at the River Rouge plant. Others may be taken up the Hudson river to the Queen Island Ford plant at Troy where they can be cut up and the scrap moved through the New York Barge canal to Detroit. As a preparation for this immediate towing work seven tugs have been purchased from the shipping board.

All of the scrap will be retained for the Ford company's own use. Machinery as well as hulls will be scrapped with the retention only of

such machinery as can be put to use at once or for which definite future use is planned. A few of the best and largest hulls will most likely be converted to diesel engine drive and added to the present nucleus of a Ford ocean fleet of freighters.

## Sale of Hog Island Arouses Interest

More than 200 inquiries concerning the Hog Island shipyard, indicating interest on the part of individuals and large business concerns in the purchase of the property, have already been received by the Fleet corporation. Bids are to be opened in Washington on Oct. 1. From present prospects this plant, which holds the world's record for shipbuilding, will be sold at that time.

Hog Island is the largest piece of surplus property held by the Fleet corporation. The remainder has been sold in the process of liquidating the gigantic enterprise built up for war purposes. It cost the government more than \$66,000,000.

Marine men have often referred to Hog Island as the "eighth wonder of the world." While it was constructed primarily as a shipbuilding plant, its equipment and situation make it a complete industrial city in itself, and it is probable that when sold it will be used as the export center for some large manufacturing enterprise or as a seaside terminal.

Hog Island contains 946 acres of land and \$15,000,000 worth of permanent improvements. It has a frontage of 10,000 feet on the Delaware river, with seven piers on a channel 800 feet wide and 35 feet deep. It is within sight of the Philadelphia city hall. In its equipment are included 80 miles of railroad track, warehouses, machine shops, telephone and bank buildings, a jail, fire and water systems, sewers, and other requirements of a modern city.

## Buys Fifth Tanker

The Cities Service Transportation Co. announced its purchase of the American tank steamer HADNOT of 9300 tons and 3,250,000 gallons capacity. She was built at the Fore River plant by the Bethlehem Shipbuilding Corp., in 1919, and has been used for carrying molasses. The Cities Service interests will use her to supply crude oil to the new Crew Levick seaboard refinery at Philadelphia.

The HADNOT is the fifth tanker

bought by the Cities Service Co. subsidiaries in the last two and a half years. The fleet is being used to transport crude oil to the company's refineries and storage terminals at New Orleans, Philadelphia and Boston, as well as for export shipments.

## N. Y. Shipbuilding Corp. May Be Sold

Brown, Boveri & Co., Swiss electrical manufacturers, are named as likely purchasers of the plant of the New York Shipbuilding Corp., Camden, N. J. It is understood that if Brown, Boveri & Co. buy the plant, they will use it largely for the manufacture of electric locomotives, turbines, generators and motors, although shipbuilding will not be discontinued.

## Lakers Reconditioned

Contract has been awarded to W. & A. Fletcher Co. of Hoboken, N. J., for repairs and alterations to the steamers, LAKE FLORAVISTA and BABTHOLOMEW, recently purchased by the Eastern Steamship Lines, Inc., from the United States shipping board. The vessels are to be altered suitably for the coastwise trade, specifications calling for the cutting of side ports, reduction of the size of the deck hatches, installation of winches and freight elevators, repairs to machinery and boilers, and general overhauling.

## Two Freighters Ordered by Interlake S. S. Co.

The American Shipbuilding Co., on Aug. 14 received an order for two bulk lake freighters for the Interlake Steamship Co., Pickands, Mather & Co., managers, of Cleveland. The two new vessels will be duplicates and will be similar to the bulk freighter CHARLES M. SCHWAB of the Interlake fleet which was built at the Cleveland yard of the American Shipbuilding Co. in 1923. They will be of arch construction with side tanks and will measure 600 feet overall, 580 feet on the keel, 60 feet beam and 32 feet deep and will have 18 hatches. About 10,000 tons of steel will be used in the construction of the new vessels and the work will be carried out at the Lorain, O., yard of the American Shipbuilding Co. This new work should give employment to a large number of men at the Lorain yard during the winter. Delivery of the two vessels is expected at the opening of navigation in 1926.

The Interlake Steamship Co. oper-

ates the second largest fleet on the Great Lakes and when the new freighters go into commission the company will have a total of 51 steamers.

There has been additional figuring for bulk freighters and boats for special trades and other orders for 1926 delivery may be placed. However, indications are that the lake ship yards will not be overly busy during the winter.

## N. Y. City Ferryboat Launched

The municipal ferryboat JOSEPH J. O'BRIEN of the City of New York department of plant and structures was launched Aug. 6 at the John W. Sullivan drydock in Elizabeth. The launching was sponsored by Mrs. Joseph J. O'Brien, wife of the Dock Commissioner of New York, after whom the boat is named.

The JOSEPH J. O'BRIEN is 151 feet over all, 51 feet beam, has a draft of 8½ feet, and, when completed, will accommodate 3000 passengers. She has been under construction 14 weeks, and is scheduled for completion in three months.

## New Steamship Company Organized

C. L. Dimon, president of the Boston, New York & Southern Steamship Co., recently incorporated in Delaware with \$10,000,000 capital stock has announced that the company plans to operate passenger and freight steamers between Boston and New York, New York and Albany, and between New York, Havana and Vera Cruz. He said that other routes will be added later. The company also will increase its excursion trips in New York harbor, already having acquired three steamers running to Atlantic Highlands and Coney Island from New York. Two new 400-foot passenger and freight vessels are to be added to the line next spring.

## Carinthia Accepted by Cunard Line

A recent cable from Liverpool to the Cunard Line office in New York states that the CARINTHIA trials on the Irish Sea have been entirely successful and that the palatial new 20,000-ton steamer has been fully accepted by the Cunard Line. The CARINTHIA is a sister ship to the FRANCONIA. Special features are a Spanish design

smoking room, enlarged restaurant, improved swimming pool and athletic arena.

The new ship is classed as one of the finest ships of her size in the world. She started from Liverpool on her maiden trip to New York on Aug. 22 and will make the return voyage on Sept. 5. On Oct. 10 she will start on a cruise around the world under the auspices of Raymond & Whitcomb. The same company has chartered her for a Mediterranean cruise next spring upon the completion of her world cruise.

The Bethlehem Shipbuilding Corp. Union plant has been awarded the contract for repairs and alterations to the Standard Oil Co. (Calif.) tanker MONTROLITE at \$58,842 and 29 days.

## Italian Line Builds New Ships

Captain Angelo Rustini, president of the Italia-American Shipping Corp., announced recently that the Navigazione Generale Italiana, had laid the keel for the AUGUSTUS, a 31,000-ton passenger liner. The vessel which will cost \$6,000,000, will be launched in the fall of 1926 and will be ready for service in the summer of 1927.

The ROMA, a 33,000-ton passenger liner, will be launched in October, Captain Rustini said, and will be placed on the New York-Naples run next summer.

## Ward Line Receivership Comes to an End

Col. Francis G. Caffey receiver for the Ward Line a subsidiary of the Atlantic Gulf & West Indies Steamship Lines has been directed by an order of Judge John C. Knox in the Federal court to return to the company all its properties by midnight Aug. 31. The Ward Line is completely solvent and is in a position to meet all its obligations as they mature.

Colonel Caffey was appointed receiver on Dec. 31, 1923. As receiver he brought an action against the Atlantic Gulf & West Indies Steamship Lines alleging that they had appropriated Ward Line assets. Under the terms of the agreement ending the receivership this suit is discontinued.

The order recites that of 5103 bonds of \$1000 value of the Ward Line, the "Agwi" lines have acquired all but 34; that of \$1,569,254.87 in maritime liens, \$1,363,342.31 in claims has been

allowed, \$84,645.62 in claims being disallowed and the remainder referred to a special master for decision. Included in the preference claims that are before the special master is one of \$917,605.17 of the United States government, there being also \$40,062.57 in preference claims thus far allowed and \$6,208.52 disallowed.

General claims total \$2,743,766.98. Of this amount \$2,196,622.01 still remains subject to adjudication by the special master. Only \$216,897.97 in general claims had been allowed when the report was made to the court and \$329,740.37 had been disallowed. The papers say there are other claims which are covered by indemnity insurance.

### Norwegian Steamer Docks in Cleveland

Some say that it is half a century or more since the city of Cleveland, on Lake Erie has had a chance to make all-the-way-by-water shipments to Europe. This chance was afforded the city by the calling at Cleveland of the Norwegian tramp steamer Nico of 2100 tons deadweight, on Aug. 25.

The Nico and another Norwegian steamer the ANDERS if present arrangements are continued will call regularly once a month at Cleveland and Detroit for European cargoes. Frank Lane, an importer of New York is backing the operation of the two vessels in this trade, probably made possible by the amount of cargo involved in his own transactions. From 10 to 20 per cent will be saved in freight rates over the combined rail and ocean rates it is said.

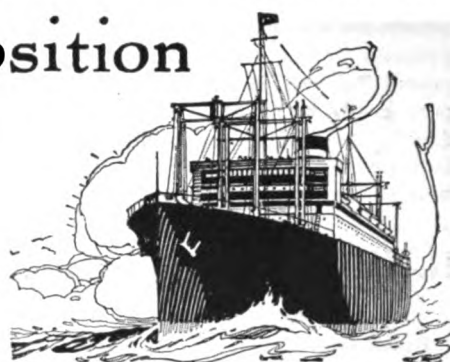
### July Lake Levels

The United States Lake Survey reports the monthly mean stages of the Great Lakes for the month of July, 1925, as follows:

Lakes	Feet above mean sea level
Superior .....	601.89
Michigan-Huron .....	578.52
St. Clair .....	578.81
Erie .....	571.11
Ontario .....	245.21

Lake Superior is 0.17 foot higher than in June and it is 0.07 foot higher than the low July stage of a year ago. Lakes Michigan-Huron are 0.08 foot higher than in June and they are 1.01 feet lower than the low July stage of a year ago. Lake Erie is 0.08 foot lower than in June and it is 1.33 feet lower than the July stage of a year ago. Lake Ontario is 0.21 foot lower than in June and it is 1.00 foot lower than the July stage of a year ago, 1.40 feet below the average stage of July of the last ten years.

## Marine Exposition To Be Held in New York Nov. 9-14



NEVER before in the history of the industry has so wide spread and so keen an interest been taken in a forthcoming show as that brought out by the American Marine exposition, featuring ship-building, marine equipment, ports and transportation, to be held in New York at the Two Hundred and Twelfth Anti-Aircraft Regiment armory at Sixty-second street and Columbus avenue the week of Nov. 9 to 14.

Fifteen important marine societies, embracing all the technical and non-technical personnel of the industry, owners, operators, builders, architects, engineers, standardization, port authority, equipment manufacturers, and operation will convene in New York during marine week.

Thus will be gathered together the largest marine group probably ever assembled in any American city.

An exhibit of a ship model contest by the boy and sea scouts of America will focus the attention of over a half million young Americans on the marine industry and their enthusiasm will be shared by a vast number of our adult population, who will be on hand to witness the interesting details surrounding the award of prizes. The scout winning the contest will be sent to see the mayor of his city, the governor of his state, the President of the United States and be given a student's tour to Europe. The scout winning second prize will be sent to see the mayor of his city, the governor of his state, and be given a coastwise trip.

Interesting exhibits depicting the air and sea forces of the United States navy, the services of the department of commerce, the achievements of the war department, army engineers and inland and coastwise waterways service, together with the unusual exhibits now being built by the members of the association, will present an exposition that should receive the active co-operation of every person connected with the marine industry.

For two years now there has been

no general public display of the machinery and equipment that go into the building and operation of ships. Two years in which there has been important developments in mechanical efficiency and a marked tendency to apply the knowledge gained by scientific study and practical experience to the reduction of every item going into the cost of operation. Keen competition is surely forcing slipshod rule of thumb management into the discard. Only the wise operator who watches all costs with a trained experienced eye can hope to place his business on a properous plane. And all such operators are keenly alive to savings possible by making real improvements in equipment, in the quality of paint used, wire cable, manila rope, type of winch, refrigerating machinery, cargo blocks, labor saving hoists and cranes and trucks for moving and shifting of cargo, and in every other piece of equipment or device. Such operators are also greatly interested in the best type of main drive, auxiliaries, and equipment for the new ships which sooner or later must be built.

Hiding one's light under a bushel is just as serious a mistake in the marine industry as in any other. Interest must be created before sales can be made. There has been a very steady and consistent improvement in harbor and terminal facilities in a remarkably large number of ports on the Atlantic, Gulf and Pacific coasts during the last two years. Are these vast expenditures in labor and capital an economic blunder? Are these fine docks, warehouses and terminals to fall into decay before they will be needed? We think not. And what does such enterprise forecast, backed by real expenditure, but the rapid growth of water borne commerce and additional fine ships to carry it. Have faith in the industry; be alive to its possibilities, be progressive and energetic, and exhibit at the Marine show in November in New York and you will help yourself by helping to create a vigorous interest in the merchant marine.



# Dock Management Progress Section

How Successful Dock Operators Have Met  
Problems of Giving Best Service to Ships

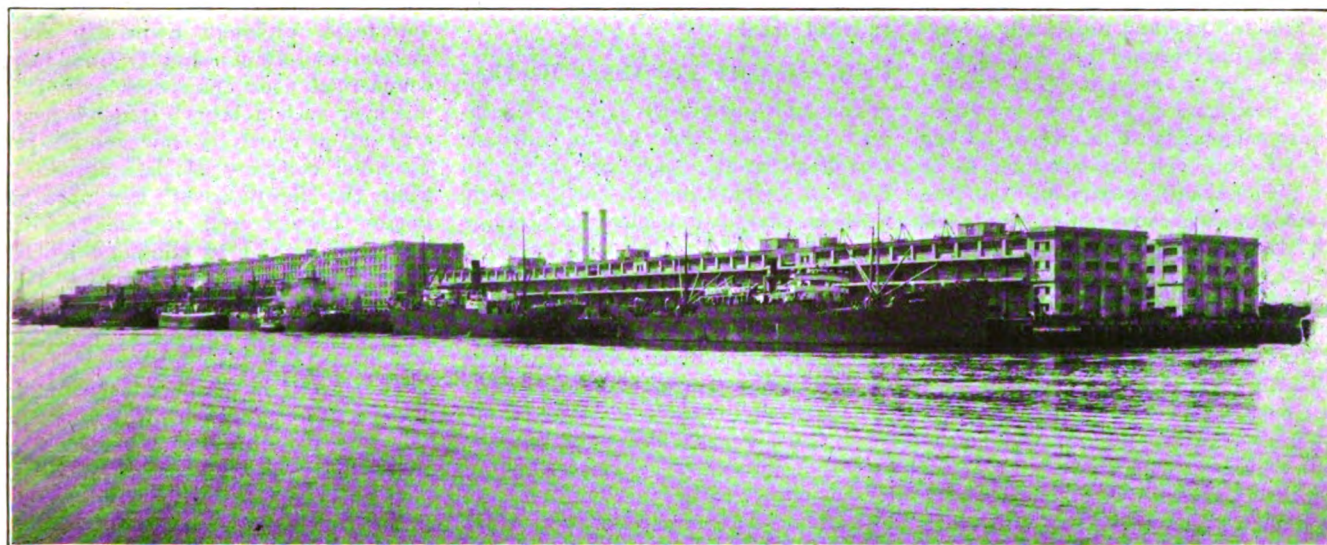


Fig. 1—Boston's magnificent pier built at a cost of \$24,000,000 in 1918 and used as an army supply base is now under the control and operation of the Boston Tidewater Terminal, Inc.—More than a mile of berthing space is available

## How Losses Were Changed Into Profits

Boston's Army Base Dock a White Elephant Put to Work

BY H. R. SIMONDS

ONE of the monuments of the recent war is a mammoth concrete pier extending 4500 feet out into the Boston harbor. This pier known as the Army Supply Base pier was regarded at the close of the war as a tremendous asset to the port of Boston, and great things were expected of it. Money had not been spared in its construction. At first no obstacles appeared to interfere with the rapid and efficient handling of large quantities of freight. However, it was soon discovered that the operation of modern efficient handling equipment is dependent upon a supply of material to be handled. Here was a great modern pier, one of the finest in the world, but without freight it was a veritable white elephant.

The war department did not wish to lose control, and all through 1920 and into 1921 the pier was used only for the storage of army supplies and for docking army and navy and other government vessels. During this time one side of the pier was used for mooring some 50 or

more idle vessels, another war monument and another white elephant

### Not a Miracle—Merely Private Operation

Nothing could be more eloquent in emphasizing the superiority of private initiative and control over attempted government operation of commercial enterprises than this story of the magnificent army supply base pier in Boston. A desultory attempt was made to operate this \$24,000,000 property under shipping board control but government red tape and lack of individual responsibility and interest caused heavy losses. In a period of only one year under private management a great volume of business has been built up—and at a profit. Efficiency and enterprise—that is what government operation lacks.

which as yet has not been put to work.

The pier itself after many negotiations is now finally in the hands

of a private operating company, and red ink has disappeared from the management ledger. Because of the size of the project and the fact that its present business has been completely built up in the space of a little over one year, the methods of securing and handling freight are of particular interest.

### Now Under Private Management

In 1921 the army department turned the pier over to the shipping board under whose management commercial freight was solicited. The red tape of the shipping board, however, contrived to entangle the freight. Delays occurred which tended to turn shippers to other piers. Then too, shipping companies not operating shipping board vessels felt that they would be discriminated against if they used a shipping board property. For one reason or another the venture was not profitable, and the pier was used at only a small part of its capacity. From 1921 to late in 1923 its operation would have shown a heavy loss had books been kept



with interest and rental charges such as would have to be made in an independent commercial venture.

Early in 1924 a new and independent company was formed called the Boston Tidewater Terminal Inc. Harvey C. Miller was responsible for the formation of this company. Mr. Miller is a man who specializes in the business of white elephants. Early in his career he started taking over business failures and practically everything he has touched has been transformed into a success. At present he is president of eight or ten prosperous companies all of which he has rescued from oblivion. Among these are the Southern Steamship Co., the Merchants Warehouse Co., Philadelphia, the Keystone Warehouse Co. at Buffalo, and the Atlantic Tidewater Terminals, New York. Captain J. M. Hoffman headed the shipping board interests at Boston and was, therefore, well aware that the army supply base dock as it was being run was a white elephant. It was natural that these men should get together. The new company was entirely divorced from the shipping board except for a lease agreement. Captain Hoffman was placed in charge, H. F. Donnelly was made superintendent, and a little later L. J. Coughlin was appointed traffic manager.

#### Amazing Transformation Takes Place

The history of the brief life of this company has been phenomenal. A great dock with its many ramifications has been lifted out of a state of semi-coma and much red ink and transformed into an intensely active and successful commercial property. Comparative figures while startling do not begin to tell the story. The operating expense during the first year under the new company's control was \$75,000 less than during the last year under the control of the shipping board. When asked how this saving had been effected, Captain Hoffman said, "Chiefly by giving every man on the dock a profitable job and seeing that he did it." When the Boston Tidewater Terminal took over the dock, Captain Hoffman in one day cut the office payroll from \$11,000 a year to \$8000, the guard payroll from \$11,000 to \$3000 and the labor payroll from \$53,000 to \$15,000 or \$20,000. Later this labor payroll was further reduced.

Before following Captain Hoffman through his successful struggle to change losses to profits some idea of the physical property which he took over should be stated. The pier itself built in 1918 at a cost of \$24,000,000 extends 4500 feet out from

shore and is 300 feet wide at the outer end. On this pier are built three modern concrete buildings, two 3-story and the third 2-story, providing over half a million square feet of storage space in addition to 340,000 square feet of lower deck space for placing transient freight. Each warehouse is served with railroad sidings and roadways on both sides. All told the pier has seven miles of railroad track.

#### Fully Equipped For Cargo Handling

The unloading and loading equipment includes four 2½-ton electric traveling cranes such as shown in Fig. 2 eighteen 1½-ton electric winches, five 1-ton electric portable elevators, a 1-ton portable electric crane, five electric tractors, and 100 trailers. In addition to this the storage buildings are equipped with twenty-one 6-ton elevators which make it possible to transfer freight from the dock to storage directly overhead from almost any point on the pier. A power snow plow and a tractor sweeper are included in the long list of equipment. The total length of berth space exceeds a mile and it is thus possible for eight or nine good sized ocean vessels to berth at one time. Fig 1 shows the pier with five vessels unloading along one side. More than 40 vessels were berthed during June with a total of 50,000 tons of freight handled. The visitor to the pier today finds it a veritable hive of activity. An average of about 200 truck loads and 50 loaded freight cars leave the dock each day. Checking clerks, guards, time keepers and laborers are encountered everywhere in the midst of the activity, yet no one is idle. Every man seems to be having a job and to be interested in doing it. Captain Hoffman is frequently asked how the surprising operating economies have been effected. He usually laughs and replies that it is a simple straight story of the use of common sense.

#### Sources Of Revenue Analyzed

As soon as the operation of the pier was taken over each phase of activity was studied by itself. The five principal divisions based on possible revenue were listed as follows: Wharfage, handling material, storage, railroad contract work, and clerking for steamships. Under each heading the question of income or revenue was first considered, the important question being how could the gross revenue be increased. Captain Hoffman tells the story of an acquaintance in the warehouse business whose records showed that he was

losing a small amount on each ton handled, and who, therefore, felt much elated when the tonnage passing through his hands dropped to a low point. The Boston Tidewater Terminal determined that there should be a small profit on each ton handled and that being assured of this, every effort should be directed toward increasing the tonnage. Perhaps it should be pointed out here that the enterprise, although a private commercial one, differs slightly from most commercial dock enterprises. In taking over such a large extensive property at a relatively low rental, the Terminal company officials agreed to keep the interests of the port of Boston always well to the fore in their minds, and to eliminate as far as possible strictly competitive features which would tend to interfere with the going business of other warehouse and pier interests. Curiously enough it developed that most avenues of extension which would help the port of Boston would also increase the profits of the Terminal company. A few examples will illustrate this.

Previous to the formation of the Boston Tidewater Terminal almost no wood pulp was arriving at Boston. The pier facilities were seen at once to be admirably suited to the handling and storing of wood pulp and a vigorous campaign was started to develop traffic in this commodity. The result has been most favorable and, of course, has been of direct advantage to the port. Similarly cement, lumber, nitrates, and recently some pig iron have been added to the commodities regularly received and stored.

#### Accurate Records Established

The terminal company early determined that a reputation for service was a fine capital for any company to have, and with this in mind a system of records and instructions was carefully worked out to avoid delays, loose ends, errors, and other undesirable elements which are only too ready to appear in the extensive handling of miscellaneous freight.

Service is an easy thing to promise but a difficult thing to continuously deliver. On a large dock it means first of all accuracy in reading and carrying out directions. Service also depends to a large extent on the method of keeping track of material, and when thousands of individual packages are handled daily great care is required in devising a scheme of records which will be simple and at the same time comprehensive. The terminal company established an auditor as a sort of clearing house or a



central point for the receipt of nearly all records.

All of the general handling of labor on the pier with the exception of the independent stevedore workers has been divided into small groups with each group in charge of a foreman. These groups are assigned definite work and a daily report of the work done is made out by the foreman on the form marked A in Fig. 4. This particular form which gives a complete record is sent each night to the auditor. It will be noted that one column on the form is headed steamship clerk. When freight is loaded into freight cars a representative of the steamship company stands on one side and checks against a representative of the pier, who checks on the opposite side. The name of the steamship company representative is then entered on the form so that in case any dispute arises later as to the number checked, the name of the steamship clerk who checked the

vessel is carefully noted and six days free time are allotted on all freight unloaded. The minute the end of the six days elapses without any instruction or disposition of the freight having been received, it is placed in storage, and a month's storage charges in advance are placed against it. The complete storage record of each consignment of goods is kept on a form known as a delivery record,

When special work of any sort is to be done on the pier such as contract handling or repair of equipment, the work order form marked D in Fig. 4 is used. This is made out by the superintendent and given to the man who is to have charge of the work. It is made out in duplicate and the duplicate is immediately sent to the auditor. The auditor then makes a quick estimate of the length

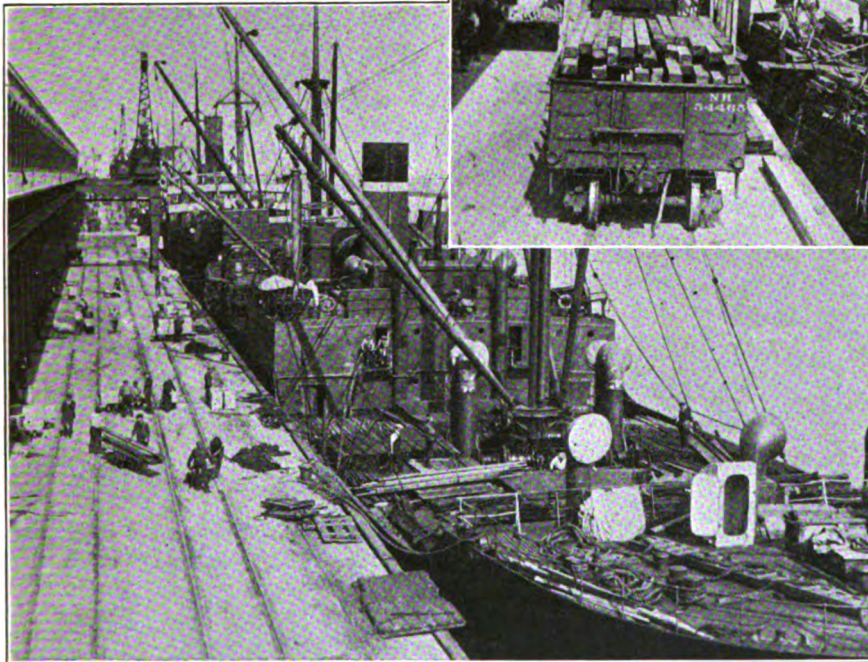


FIG. 2—IT IS NOT UNUSUAL TO HAVE EIGHT OR NINE VESSELS UNLOADING AT ONE TIME AT THE PIER

tally is available. The auditor bills direct from these daily time reports. Railroads are billed for handling charges as shown by these records of each foreman.

Another form known as a dock charge sheet is made out for each vessel by one of the terminal clerks. This is shown marked B in Fig. 4 and is also sent to the auditor and from it bills are made out for all of the various dock charges such as electric light service, hawsers or lines, and wharfage.

The exact time of arrival of each

shown in Fig. 4, marked C. This card gives the name of the consignee, the location of the goods in storage, the steamship from which it came, the number of packages, and the number of the warehouse receipt which may be referred to at any time for further details. On this delivery card is entered each delivery made from stock. The cards are filed under different days of the month, depending on the day the material went in storage, and from this file the auditor each day makes out his bills for storage.

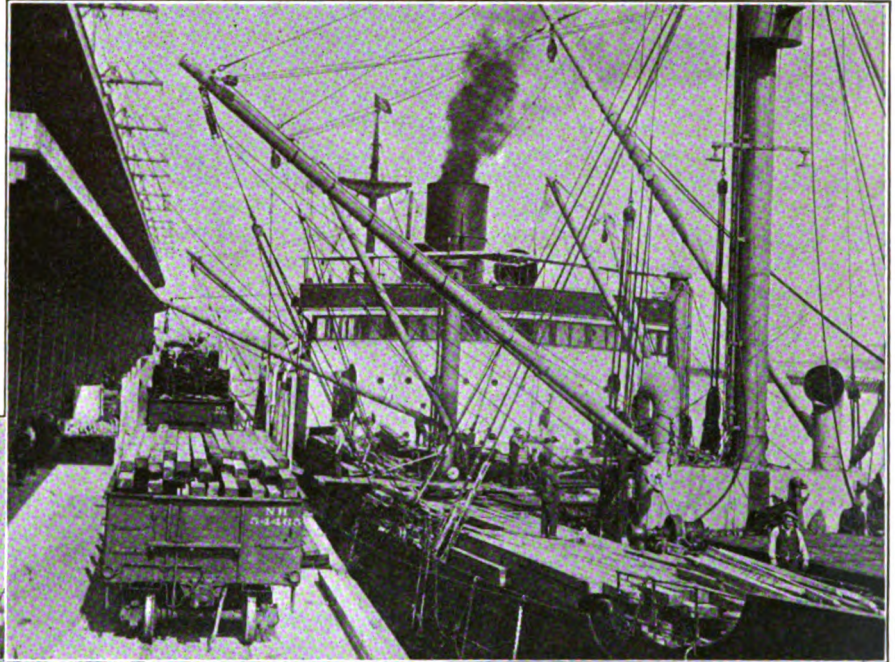


FIG. 3—SEVEN MILES OF RAILROAD TRACK ON THE PIER MAKES IT POSSIBLE TO TRANSFER LARGE AMOUNTS OF CARGO DIRECT FROM VESSELS TO CARS

of time the work should take and then files the duplicate under the day of the month corresponding to the estimated date of completion. For instance, if the work described was estimated to take four days, the auditor would file the duplicate under the date four days ahead, and then when this day arrived, he would look for the original record showing that the work was completed or else would get in touch with the men in charge of the work, and find out the reason for the delay.

#### Keeping Tabs On Work

A great deal of stress is placed on this particular form and the fairly simple means of checking up completion of work. If a completion date is promised, the superintendent notes it on the work order. The auditor then files the duplicate accordingly. The auditor or his assistant make it a routine practice each day to check the duplicate work orders filed for completion on that particular day against the originals which indicate



that the work has been completed. All duplicates without a corresponding original are made the cause of an investigation. There is a definite system which requires that each duplicate as it comes up in the files each day be definitely disposed of. Either it is matched with its original and goes to another file for

knows that his performance is being checked and that he will have to explain delays.

Another important record is known as the dock delivery record marked E in Fig. 4. This particular record constitutes the complete official receipt of all goods received at the dock. It shows the name of the ves-

truck driver then signs in the right hand column. At the bottom of the form is a notation of any breakage or poor condition.

Tally cards like the form marked F shown in Fig. 4 are made out for all the goods coming in and going out, and are kept on file as a check against the other records. A form

The figure displays seven overlapping forms from the Boston Tidewater Terminal, Inc. (No. 000, 888 Summer Street, Boston, Mass.).

- Form A: VESSEL RECORD** - A large ledger with columns for cargo tons (loaded, discharged, received), charges for various services (dockage, lights, etc.), and remarks.
- Form B: BOSTON TIDEWATER TERMINAL, INC. No. 000** - A form for recording arrivals, departures, and overtime.
- Form C: BOSTON TIDEWATER TERMINAL, INC. No. 151 WORK ORDER** - A form for assigning work to a crew, including a list of tasks and a signature line.
- Form D: BOSTON TIDEWATER TERMINAL, INC. No. 152 DAILY TIME REPORT** - A form for recording the time spent on various tasks, categorized by type of work.
- Form E: BOSTON TIDEWATER TERMINAL, INC. No. 18 18436** - A dock delivery record for a shipment of 1050 packages of wool grease, received from Bremen.
- Form F: BOSTON TIDEWATER TERMINAL, INC. No. 153 TALLY CARD** - A form for recording the quantity of goods received or shipped.
- Form G: BOSTON TIDEWATER TERMINAL, INC. No. 154 DELIVERY RECORD** - A form for recording the delivery of goods to a customer, including a signature and date.

FIG. 4—THE SEVEN FORMS REPRODUCED ABOVE, EACH LETTERED A, B, C, D, E, AND G RESPECTIVELY FOR CONVENIENCE OF REFERENCE, ARE ALL USED IN THE MANAGEMENT OF THE FORMER ARMY SUPPLY BASE PIER AT BOSTON BY THE BOSTON TIDEWATER TERMINAL, INC.

billing, or else the nature of the delay is ascertained and it is marked accordingly and again filed at a date corresponding to a new estimate.

Whenever a promise of delivery has been made and the work is not completed on the day stated, the men or firm concerned is notified and is given a second estimate as to date of completion. Naturally such delays are avoided wherever possible. This work order filing system means that each man in charge of work

sel, the bill of lading number, consignee, nature of the goods, and the number of packages. Following this is a detailed record of the disposition of all of the material. If it is shipped by freight car, the number of the car and the number of pieces is clearly shown, together with the written receipt of the railroad representative. When goods are sent by truck, an order from the owner of the truck is required. The owner's name is entered in one column, and the

known as a vessel record is a complete log of the dock activity, and in effect the complete ledger of the company. This form, half of which is shown marked G in Fig. 4, has one line giving the record of each vessel docked. On the half not shown is recorded the name of the vessel, the line, the owner, the agent, the hour and date of arrival, the number of the berth occupied, the hour and date of departure, and the ship tonnage. The half shown covers a com-

plete resume of the cargo and a record of all charges. From this record the gross revenue for each vessel may be seen at a glance and thus, knowing the current operating charges it is fairly easy at any time to determine the net profits.

The service performed by a so-called jobbing dock is not confined to dispatch and efficiency in the delivery of material. To give good service the dock manager must anticipate the needs of all the various interests centering at his pier. Some of these needs may be more clearly seen by taking a typical docking example. In the first place the superintendent keeps in touch with all shipping operators on the Atlantic coast, and when he first receives notice that a vessel is scheduled to dock at his pier, this vessel's name is posted on a bulletin board designed for this particular purpose. From the time it is posted until it actually docks close track of its movement is kept. This is done at first through the agency or shipping operator, but as the vessel gets near port, direct radio communication is set up with the vessel's captain and the time of arrival is determined as closely as possible. This is corrected as rapidly as any pertinent news is received.

#### Berths Allocated Before Arrival

Usually about two or three days before arrival a berth is allocated. The tow boat company which is to

help bring the vessel into port is notified, the stevedore company is notified, and the railroad concerned is notified. News of changes in berth and time of arrival is promptly passed on to these various interests as part of the regular terminal company service.

Radio has been a boon to dock managers. It means that the needs of an incoming vessel are known ahead of time. If refrigerator cars are desired spotted at a vessel's berth, this is easily arranged in advance. If cranes or special unloading equipment is needed because of the nature of the freight, these are all placed in readiness. The captain of an incoming vessel soon learns to appreciate having his needs looked after. He likes to dock where all arrangements for his arrival have been made in advance and the news of dock service travels fast from captain to captain and from vessel to steamship operator.

The Boston Tidewater Terminal is now handling material at the rate of 350,000 tons a year, and to do this uses a force of 65 railroad loaders, 35 clerks, 12 crane, hoist and tractor operators, besides miscellaneous foremen and handy men. The average charge made for loading material is three cents a hundred pounds in and three cents a hundred pounds out. The storage rates range from twenty cents a ton per month for pig iron to \$1.80 a ton per month for coffee.

similar to those used on locomotives and reversing marine steam engine. By linking up, the opening of the piston valves is made to the period of fuel injection in such a way that, for practical purposes, combustion takes place during the entire time that the valve is open. The practical effect in the operation of the engine will be that fuel will be supplied to the point of cut off of the piston valve, which will be open for the power necessity of the engine. The result-diagram will, therefore, be that of the steam engine so far as the admission and point of cut off are concerned. The main purpose of the clearance reservoir is to maintain the maximum working pressure desired, which, in the case of the present engine, is 350 pounds per square inch. As this is the normal compression-pressure of each working cylinder, it is also the normal pressure for the receiver or reservoir.

A novel arrangement of fuel pumps and fuel admission valves is used. The fuel pump is placed on top of the valve chest and is driven directly from the valve stem. The pumps deliver the charge of oil for each stroke directly into each individual fuel valve, there being no piping whatever employed. The pressures will be between 4000 and 8000 pounds per square inch. The action of the pumps synchronizes with the action of the valves, both being operated from the same valve stem, thereby assuring the maintenance of relation between fuel injection and duration of the valve opening to cut-off. Because of this construction, there practically will be no rise in pressure in the cylinders or in the system beyond that due to compression.

Maintaining the maximum pressure to a definite figure allows the carrying out of a program for the design of relatively light-weight oil-engines. It is expected that the Whaley engine will weigh less than 100 pounds per horsepower.

The Whaley Engine Patents, Inc., owns the patents for the Western hemisphere. The International Whaley Engine Corp. owns the patent rights for the Eastern hemisphere. The American Locomotive Co. owns the exclusive license for the use of the Whaley engine on rails for the Western hemisphere. The Sun Shipbuilding & Dry Dock Co., Chester, Pa., has a contract for building these engines for marine and stationary use in the United States. The engineering firm of Parish & Tewksbury, Inc., New York, has had executive charge of this development since February, 1924.

## New Principle-Oil Engine Completed at Chester

THE Sun Shipbuilding & Dry Dock Co., Chester, Pa., has completed the building of the new Whaley oil engine, which was invented by William B. Smith Whaley and designed by Charles A. Muller of the Whaley Engine Patents, Inc. This engine was privately shown to stockholders and interested engineers at which time it was operating on air only for the shop tests.

Ninth of a series built during the past several years for the purpose of perfecting a new power cycle, this Whaley engine is described as a single-acting four-cylinder two-cycle machine designed to develop 750 horsepower. It is a vertical reversing engine, conventional in design though following the best steam engine practice. It is distinguished from all other heavy oil engines in this country and abroad by the fact that the cylinder clearance, at the time of

the fuel injection, is opened by a piston valve to communication with a static receiver having many times the capacity of the cylinder clearance. This presents a condition exactly the opposite to that in all present internal combustion engines, where the basis of operation is on a trapped charge. In the Whaley engine, the piston valve to the static receiver is open as long as the fuel is being injected.

The Whaley engine has the usual form of port scavenging supplemented by high pressure scavenging and supercharging through the top of the cylinders. The last two operations are carried out with air at a pressure of about 45 pounds per square inch.

#### Control Of The Air

The air is controlled by piston valves, one working inside the other and both being actuated by links

# Late Flashes On Marine Disasters

Brief Summaries of Recent Maritime Casualties—  
A Record of Collisions, Wrecks, Fires and Losses

NAME	DATE	NATURE	PLACE	DAMAGE RESULTING	NAME	DATE	NATURE	PLACE	DAMAGE RESULTING
Araguaya	June 26	collision	Gravesend	Bow	Halesius	July 21	Fire	Buenos Ayres	Not stated
Atlantic	July 14	sank	nr. Charleston	Not stated	Helene Otto Ippen	July 2	Collision	Kiel	Not stated
Alison	June 28	grounded	Princes Channel	Floated	Henrich	July 2	Fouled	Hamburg	Extensive
Asta	June 28	stranded	so. of Dragor	Floated	Henry	July 6	Disabled	Sprun	Leaking
A. W. Coburn	July 16	ashore	Diamond Reef	Floated	Hans Gude	July 8	Ashore	Whitefish Point	Floated
Agwibay	July 20	disabled	Baltimore	Steering gear	Halgan	July 9	Aground	Pernambuco	Not stated
Anna Jensen	July 21	ashore	Chatham Bar	Floated	Hagaromo Maru	July 13	Grounded	Chonjuin Korea	Not stated
Agawa	July 26	Aground	Bois Blanc	Floated	Iguassu	July 12	Stranded	Lundy Island	Floated
Ansonia	July 20	Aground	Bolivar Roads	Floated	Isabel C. Harris	July 29	Ashore	South Coast	Total Loss
Adour	July 25	Disabled	Baltimore	Engine trouble	Ingrid	July 30	Fire	Not stated	Serious damages
Andaste	July 25	Struck bowlder	Sturgeon Bay	Two damaged plates	Jacksonville	July 24	Disabled	New Orleans	Leaking
Agnes	July 7	Stranded	Oland	Not stated	J. S. Morrow	July 28	Collision	Buffalo	Starboard bow
Amersfoort	July 9	Grounded	Krankeloon	Floated	Jollu Charles	July 25	Grounded	Creiglwyl Pier	Not stated
Antonios D.	July 8	Grounded	Buenos Ayres	Not stated				Penmaenmawr	
Kydoniefs	July 15	Ashore	Cape Fear	Not stated	Kruckau	July 6	Collision	Emden	Not stated
Amazon	July 15	Disabled	St. John's, N. F.	Propeller blades	King Alfred	July 10	Fire	Antwerp	Bunkers
August	July 15	Disabled	St. John's, N. F.	Propeller blades	King Idwal	July 6	Fouled	Whitehill Point	Not stated
Alden	July 28	Aground	Pamet River	Not stated	Kewance	July 6	Disabled	Durban	Steering gear
Andaste	July 25	Struck a bowlder	Sturgeon Bay	Not stated	Kenyon	July 8	Struck pier	Avon	Rudder stock
Arizonan	August 7	Stranded	Columbia River	Floated	Knockferna	July 29	Struck object	Cornwall canal	Tanks leaking
Arlcia	July 9	Collision	River Wyre	Floated		August 9	Disabled	Falmouth	Main feed pumps
Athabasca	July 5	Ashore	Whitefish Point	Floated	King Edward	July 31	Collision	Large	Not stated
Aidaste	July 29	Struck rock	Sturgeon Bay	Plates	Lucy Hughes	July 19	Ashore	Plymouth	Not stated
Anna B.	July 30	Collision	Antwerp	Slight	Lillian	August 5	Explosion	New York	Total loss
Bream	June 24	Fire	Granville	Not stated	Luossa	August 11	Ashore	Aalborg	Floated
Balmarino	July 1	Ashore	Green Island	Not stated	La Valette	July 31	Struck dock	Constantinople	Undamaged
Burdale	June 30	Fire	Rosario	Cargo	Monafrie	June 28	Str'k Roys	Antwerp	Not stated
Bouliner	June 27	Ashore	Fort de France	Total loss	Meichen	July 23	Ashore	Ichang	Not stated
Bernisse	July 6	Collision	Emden	Not stated	Madge	July 6	Fouled	Whitehill Point	Not stated
Bellena	July 6	Aground	Casablanca	Not stated	Montpellier	July 6	Collision	Brooklyn	Stern
Bianca	July 5	Stranded	Moon Sound	Floated	M.T. Barge No. 2	June 22	Fire	Busreh	Total loss
Bolivier	July 7	Aground	San Nicolas	Floated	Megna	July 8	Disabled	Rio Janeiro	Bottom
Bambino	July 7	Exploded	Middle Rainy River	Sank; loss	Mars	July 10	Ashore	Loppen	Floated
Belona	July 10	Disabled	Rotterdam	Leaking	Maunawili	July 13	Struck pier	San Francisco	Bows stem.
Balmoral	July 15	Collision, fog	Off Brambles	To bow	Mimi	July 13	Aground	Buenos Ayres	Not stated
Bulko	July 28	Disabled	Houston	Windlass	Mary E. Moose	July 15	Struck bar	Bandon	Plates
Berta	July 17	Heavy weather	Valparaiso	Sank	Melford Hall	July 15	Struck quay wall	Durban	Bows
Brulin	August 13	Struck obst.	St. Lawrence River	Grounded	Mercur	July 15	Grounded	Guernsey	Not stated
Custodian	June 24	Fire	Lake Erie	Not stated	North Cornwall	July 12	Struck quay	Rio Janeiro	Bottom
Cherry Branch	June 26	Collision	Dublin	Not stated	Nemaha	July 12	Explosion	Shelter Cove	Total loss
Cameronia	June 28	Collision	Garvel Point	Damaged	Newport	July 26	Disabled	San Francisco	Valve stem
Claus Horn	June 25	Grounded	Falmouth	Not stated	Nemaha	July 6	Ashore rocks	Shelter Cove	Bottom
Claudegallus	July 4	Collision	Antwerp Roads	Stem	Orm Jarl	July 14	Collision	Gravesend	Starboard side
Columbia	July 27	Collision	Naples	Broken shaft	Offield	July 14	Ashore	Copenhagen	Floated
Carolus	July 2	Grounded	Riga	Floated	Otto	July 14	Collision	Weser	Stem
Campus	July 6	Grounded	Buenos Ayres	Floated	Portia	July 24	Ashore	Point La Haye	Floated
Chas. L. O'Connor	July 6	Collision	Brooklyn	Considerably	President	July 27	Disabled	Quarantine	Not stated
Cundinamarca	June 16	Fire	River Magdalena	Destroyed	Puloe Brani	July 10	Disabled	Southampton	Engine
Condor	July 9	Beached	Guayceau	Total loss	Pleasure	July 25	Struck dock	Detroit	Badly
C. E. Redfern	July 25	Sprung leak	Marquette Bay	Sank—floated	Philadelphian	August 6	Aground	Savannah	Floated
City of Auckland	August 6	Disabled	Malta	Machinery	Portgwarra	July 28	Disabled	Pensacola	Engine
City of Tokio	July 17	Grounded	Quelpart	Floated	Queen City	July 26	Fire	Lake Superior	Damaged
City of Pekin	August 3	Fire	San Francisco	Bunkers	Quincy	July 31	Ashore	Palmer Island	Floated
D. W. 17	July 2	Disabled	Cape Sandalo	Sank	Queensland	July 29	Aground	Rosario	Floated
Dalny	July 6	Fire	Buenos Ayres	Not stated	Rosanna Francis	July 14	Collision	Annapolis	Sank
Doris	July 9	Dismasted	South Foreland	Not stated	Ryujin Maru	July 4	Collision	Antwerp Roads	Badly
Duke of Edinburgh	July 10	Ashore	Breaksea Point	Floated	Ravenscar	July 13	Ashore	River Amazon	Floated
Dea	July 27	Touched ground	Sea Island	Leaking	Rangeley	July 29	Not stated	New York	Sank
Delawana II	July 24	Ashore	Holyrood Harbor	Not stated	Refloater	July 18	Aground	Shotley Pier	Portside
Derwent	July 29	Collision	Trafford Wharf	Sank					foremast
Egremont Castle	July 20	Ashore	Tbataha Reef	Sunk	Reliable	July 19	Explosion	Chicago	Sank
E. G. Crosby	July 23	Disabled	Manitowoc	Wheel	Roam	July 22	Struck pier	Shoreham	Plates
Edward	July 24	Collision	Sandy Hook	Not stated	Shahristan	July 26	Collision	Gravesend	Port quarter
Luckenbach	July 10	Struck stone quay	Grimsbay	Not stated	Superior	July 20	Struck North Lake Michigan Point	Lake Michigan	Leaking
Eskulino	July 14	Ashore	Massowah	Not stated	Sally Wren	July 24	Collision	Sandy Hook	Waterlogged
Exmouth	July 9	Collision	River Wyre	Not stated	Singapore Maru	July 10	Ashore	Perim	Floated
Eastern Dawn	August 5	Disabled	Antwerp	Engines	Sunflower	July 2	Grounded	Oporto Bar	Floated
East Goodwin	August 14	Collision	English Channel	Considerable	Santa Olivia	July 2	Disabled	Balboa	Propeller blade
Lightship	August 14	Disabled	Swansea	Engines	Sally Maersk	July 13	Disabled	St. John's, N. F.	Leaking
Elf	August 14	Disabled	Swansea	Engines	Silverpine	July 15	Heavy weather	Manila	Engines
Fushiki Maru	June 26	Ashore	Shiritoko Saki	Total loss	Santa Luisa	August 13	Grounded	Gatun	Floated
Flora	July 10	Fire	Grimsbay	Bunkers	Thetis	July 10	Fire	Mattapoissett Harbor	Sank
Forelle	July 30	Ashore	Nr. Cuxhaven	Floated	Toshin Maru	June 30	Ashore	Karafuto	Total loss
Ganemedes	June 24	Struck bridge	North Sea Canal	Bow	Tento	July 16	Struck rock	Notre Dame Bay	Forepeak
Greta	July 16	Fire	London	Cargo	Tagliamento	July 29	Disabled	At sea	Blade propeller
George W. Parker	July 23	Aground	St. Clair Flats	Not stated	W. F. White	July 16	Struck bridge	Buffalo	Bow
Globe	July 21	Fire	Brooklyn	Considerable	Woodcock	July 12	Stranded	Dijbouth	Floated
Glencona	July 3	Disabled	Newry	Engine	Wheatvale	July 8	Disabled	Swansea	Boiler
Glen Gower	July 6	Disabled	Swansea	Steering gear	Walmer	July 15	Struck pier	Dover	Forefoot, stem
Gabriel Palmer	August 5	Sank	Bahama Islands	Not stated	Walkyrie	July 29	Ashore	Sunk Sand	Floated—leaking
Hallgrim	June 25	Struck subm. obj.	Pensacola	Propeller	Western Glen	August 13	Disabled	Cape Town	Air pump
Hauk	June 28	Collision	Garvel Point	Considerable	West Jena	August 13	Collision	Shanghai	Not stated
Harperley	July 15	Fire	Buenos Ayres	Not stated					
Hopland	July 1	Explosion	Alexandria	Not stated					
esperides	June 14	Collision	Vineyard Haven	Not stated					



# Marine Business Statistics Condensed

## Record of Traffic at Principal American Ports for Past Year

### New York

Month	(Exclusive of Domestic)		(Clearances—)	
	No. ships	Net tonnage	No. ships	Net tonnage
July, 1925	457	1,818,888	547	2,180,581
June	521	2,177,995	507	2,103,914
May	435	1,820,544	538	2,215,561
April	484	1,796,849	528	2,093,444
March	472	1,899,036	517	2,032,263
February	398	1,680,392	449	1,867,624
January	387	1,556,853	457	1,869,323
December	423	1,673,567	470	1,822,485
November	392	1,709,329	456	1,921,088
October, 1924	459	1,915,122	540	2,332,411

### Philadelphia

(Including Chester, Wilmington and the whole Philadelphia port district)  
(Exclusive of Domestic)

Month	(Exclusive of Domestic)		(Clearances—)	
	No. ships	Net tonnage	No. ships	Net tonnage
July, 1925	96	241,244	57	181,400
June	107	260,756	67	165,940
May	87	209,866	68	155,859
April	102	243,546	67	182,885
March	96	238,863	58	163,257
February	93	238,802	55	154,033
January	77	224,574	57	180,331
December	71	179,994	61	188,667
November	85	220,852	59	174,470
October, 1924	75	171,465	52	137,653

### Boston

Month	(Exclusive of Domestic)		(Clearances—)	
	No. ships	Net tonnage	No. ships	Net tonnage
July, 1925	140	386,982	115	283,858
June	161	368,009	111	213,985
May	118	296,551	93	205,291
April	99	224,275	82	179,010
March	94	295,292	54	159,928
February	85	278,024	46	121,141
January	78	205,327	34	80,480
December	100	278,347	52	125,332
November	97	310,423	55	149,777
October, 1924	128	327,931	82	179,963

### Portland, Me.

Month	(Exclusive of Domestic)		(Clearances—)	
	No. ships	Net tonnage	No. ships	Net tonnage
July, 1925	23	48,916	23	54,908
June	26	37,668	23	38,892
May	23	42,242	27	47,648
April	24	53,326	30	86,838
March	29	96,263	27	88,408
February	21	72,642	24	83,393
January	23	65,910	23	65,218
December	30	86,088	29	78,076
November	15	26,281	12	19,616
October, 1924	11	12,506	15	24,551

### Providence

Month	(Exclusive of Domestic)		(Clearances—)	
	No. ships	Net tonnage	No. ships	Net tonnage
July, 1925	12	34,885	9	27,767
June	8	34,084	7	28,575
May	15	40,689	9	27,018
April	8	26,508	9	34,277
March	11	43,757	7	28,136
February	12	37,995	13	41,669
January	12	38,395	11	39,717
December	9	36,259	11	40,624
November	11	45,232	8	37,967
October, 1924	6	16,071	8	14,522

### Portland, Oreg.

Month	(Exclusive of Domestic)		(Clearances—)	
	No. ships	Net tonnage	No. ships	Net tonnage
July, 1925	15	56,181	23	79,132
June	19	64,684	26	85,839
May	11	47,728	20	77,847
April	17	68,981	19	80,425
March	15	56,297	26	90,025
February	13	51,236	21	81,438
January	19	71,880	23	86,518
December	17	64,756	29	115,186
November	27	105,529	36	137,696
October, 1924	24	92,077	43	159,017

### Baltimore

Month	(Exclusive of Domestic)		(Clearances—)	
	No. ships	Net tonnage	No. ships	Net tonnage
July, 1925	115	845,191	123	850,375
June	118	848,571	121	853,738
May	118	841,793	129	879,956
April	125	863,583	133	894,223
March	115	344,937	112	322,580
February	103	323,817	79	250,369
January	90	282,299	79	250,369
December	105	326,907	99	291,043
November	105	325,934	97	305,601
October, 1924	101	297,822	118	355,500

### Norfolk and Newport News

Month	(Exclusive of Domestic)		(Clearances—)	
	No. ships	Net tonnage	No. ships	Net tonnage
July, 1925	61	163,784	131	347,756
June	81	221,318	152	433,953
May	63	159,186	140	376,657
April	32	84,986	112	308,744
March	26	73,427	100	257,061
February	14	40,669	66	186,031
January	39	95,259	88	262,371
December	41	108,930	93	274,576
November	31	89,647	70	205,671
October, 1924	39	95,875	71	227,247

### Savannah

Month	(Exclusive of Domestic)		(Clearances—)	
	No. ships	Net tonnage	No. ships	Net tonnage
July, 1925	38	97,332	34	91,981
June	26	60,788	27	60,924
May	27	71,946	22	65,595
April	39	106,938	36	59,574
March	40	101,403	37	91,135
February	33	90,730	33	91,062
January	40	109,496	40	113,538
December	36	109,623	39	115,168
November	35	101,689	31	98,880
October, 1924	35	101,689	31	98,880

### Key West

Month	(Exclusive of Domestic)		(Clearances—)	
	No. ships	Net tonnage	No. ships	Net tonnage
July, 1925	77	94,002	76	91,264
June	87	95,533	85	95,397
May	104	119,502	103	119,729
April	85	103,116	84	102,860
March	83	105,841	87	115,285
February	77	94,214	77	96,890
January	75	100,350	71	96,815
December	77	90,316	72	83,706
November	90	101,387	84	102,408
October, 1924	75	92,284	72	89,364

### Mobile

Month	(Exclusive of Domestic)		(Clearances—)	
	No. ships	Net tonnage	No. ships	Net tonnage
July, 1925	89	180,488	80	160,739
June	86	161,215	79	156,160
May	95	193,841	89	172,419
April	92	190,808	91	180,998
March	97	215,386	91	197,950
February	93	192,722	82	184,575
January	84	192,722	82	184,575
December	84	165,352	80	165,325
November, 1924	80	169,400	73	156,327

### Seattle

Month	(Exclusive of Domestic)		(Clearances—)	
	No. ships	Net tonnage	No. ships	Net tonnage
July, 1925	32	137,319	28	130,875
June	34	143,655	41	174,668
May	28	132,043	39	138,570
April	41	156,761	42	173,116
March	39	168,567	39	157,419
February	31	124,870	30	129,648
January	39	169,458	36	145,663
December	36	164,991	45	181,849
November	40	203,891	45	194,766
October, 1924	45	175,725	48	198,037

### New Orleans

Month	(Exclusive of Domestic)		(Clearances—)	
	No. ships	Net tonnage	No. ships	Net tonnage
July, 1925	265	673,711	262	648,474
June	268	679,277	249	609,807
May	256	666,508	276	724,621
April	266	692,569	288	727,156
March	294	774,343	280	738,445
February	178	435,135	170	433,676
January	253	731,964	264	738,164
December	277	776,064	257	735,100
November	247	713,667	250	735,984
October, 1924	267	757,788	279	768,630

### Houston

Month	(Cargo tonnage)		(Clearances—)	
	No. ships	Net tonnage	No. ships	Net tonnage
December, 1924	99	39,568	102	154,453
November	101	36,016	95	233,436
October	..	34,945	..	192,986
September	94	50,710	90	171,229
August	82	66,665	84	114,966
July	59	77,062	57	288,417
June	65	74,794	72	336,312
May	72	64,937	71	362,350
April	78	76,466	73	337,757
March, 1924	88	113,064	87	411,715

### Galveston

Month	(Exclusive of Domestic)		(Clearances—)	
	No. ships	Net tonnage	No. ships	Net tonnage
June, 1925	47	120,423	57	177,647
May	46	114,702	53	151,098
April	47	107,223	60	171,868
March	55	147,308	75	228,187
February	56	140,065	90	277,751
January	67	188,781	110	337,832
December	63	190,311	107	341,705
November	100	342,472	126	408,277
October	77	238,918	120	386,412
September, 1924	65	189,298	112	350,173

### Los Angeles

Month	(Exclusive of Domestic)		(Clearances—)	
	No. ships	Net tonnage	No. ships	Net tonnage
July, 1925	133	326,692	119	285,624
June	162	382,186	102	278,294
May	168	368,843	138	298,066
April	153	316,134	137	262,681
March	131	359,572	113	281,149
February	162	284,988	127	237,474
January	127	312,248	115	259,345
December	153	343,151	118	276,302
November	195	310,425	121	223,778
October, 1924	156	290,697	184	285,871

### San Francisco

Month	(Exclusive of Domestic)		(Clearances—)	
	No. ships	Net tonnage	No. ships	Net tonnage
July, 1925	138	517,798	136	511,844
June	135	514,900	96	464,024
May	163	567,001	145	554,483
April	134	472,879	157	517,654
March	129	542,912	189	669,367
February	117	443,749	124	454,699
January	119	446,477	126	454,303
December	59	231,805	83	314,541
November	73	251,022	82	318,615
October, 1924	64	234,894	72	243,898

### Port Arthur

Month	(Exclusive of Domestic)		(Clearances—)	
	No. ships	Net tonnage	No. ships	Net tonnage
June, 1925	26	67,251	30	88,972
May	28	105,707	42	122,871
April	33	100,595	43	116,485
March	38	95,977	45	110,248
February	32	95,537	19	44,376
January	34	100,449	33	85,261
December	34	101,609	41	122,869
November	32	107,737	32	90,726
October	47	144,763	54	159,034
September, 1924	42	120,636	38	105,700

# What the British Are Doing

Short Surveys of Important Activities in Maritime  
Centers of Island Empire

**M**R. BRIDGEMAN'S program for increasing the navy has not been allowed to pass without challenge, but in shipbuilding circles the announcement of his intention to maintain the Empire's naval strength is generally acclaimed. The program provides for the expenditure of £58,000,000 by the end of 1930, the most important item being the building of four cruisers before the end of 1926 and two up to 1927.

Mr. Bridgeman considers that British shipbuilding is far behind that of other countries, naming especially the United States, which he says has laid down ten cruisers, 76 destroyers and 30 submarines. By 1929 he anticipates Great Britain will have 14 modern cruisers. He attached importance to the amount of employment which would be given to skilled shipbuilders. It is understood that private yards will get their share of the new business, and a beginning has been made in this direction.

**S**HIPBUILDERS are not altogether happy over the position of this country in regard to motor shipbuilding. In Sweden and Denmark more than 90 per cent of the ships now being built will be equipped with oil engines and the relative figures for Germany and Italy are 77 per cent and 64 per cent respectively. The

United Kingdom is a good deal in the rear with a percentage under construction of 36.5, but there has been an increase of 12½ per cent in the oil engined tonnage on the stocks compared with a year ago.

**T**HE question of ship canals is causing a good deal of anxiety. The Severn commissioners have for some years entertained hopes that a projected ship canal connecting Birmingham with the sea would be carried out by way of the Severn, the main improvement being the enlargement of existing intermediate canals. Birmingham was attracted to this scheme by its superior cheapness as compared with other schemes, but latterly, the Midland city has swung round in favor of a canal to the Mersey which, though much more costly, would give better service. The unfortunate Severn commission has now had to approach various municipalities in its area for temporary loans to enable them to meet current expenditure, and the result that it may be closed to business.

**T**HE July returns of shipbuilding show marked increase on the Clyde as compared with May, although rather less than June. Taking the seven months production the Clyde launched 153 vessels of 333,888 tons, exceeding that of last year by 20 vessels and

51,686 tons, while it is surpassed only to the extent of 43,382 tons by the most successful year in point of output in the history of the industry, namely that of 1913. Only one other year since 1913—the year 1920—had a larger output for the seven months than the one recorded this year.

**U**NFORTUNATELY, the work in hand is not anything like equal to the capacity of the shipyards, and there is too much reason to fear that as the new business by no means equals the production a further prospect of unemployment has to be faced. The following contracts were booked during the month of July: John Brown & Co. Ltd., Clydebank, to build for the Blue Star Line, Ltd., London, two vessels, each of about 12,000 tons deadweight; Alexander Stephen & Sons, Ltd., Linthouse, a fruit-carrying steamer, 300 feet in length for Elders & Fyffes, Ltd., London, and a screw tug 115 feet in length and of 1000 indicated horse power for Australian owners; William Beardmore & Co., Ltd., Dalmuir, a sludge-carrying steamer 250 feet in length for the London county council; and the Caledon Shipbuilding & Engineering Co., Ltd., Dundee, a steamer of 1500 tons deadweight for the Limerick Steamship Co., and a barge for the British Molasses Co., London.

## What's Doing Around The Lakes

**O**PPONENTS of the so-called Chicago lake water steal have a new ally, although probably only a temporary one, in Col. A. A. Sprague, Chicago commissioner of public works. He is incensed because the Chicago council, meeting July 22, refused to adopt a water metering program.

When Secretary of War Weeks granted Chicago permission last April to continue taking 10,000 cubic feet of water per second for flushing its drainage canal he stipulated that

a start toward metering city water be made within six months, or by Sept. 7. The Chicago council, after refusing to do anything concerning metering, adjourned until Oct. 28. Meanwhile, lack of metering has so increased the consumption of city water that plans for an \$8,000,000 water tunnel have had to be rushed.

"The secretary of war has given Chicago a square deal and we cannot blame him if he revokes the permit," said Colonel Sprague. "The action of the city council gives more

ammunition to the propagandists in Canada and in the states around the Great Lakes who have been attacking Chicago."

**H**G. HUTCHINSON, attorney, has been named receiver for the Thompson Transit Co. He was named after the filing in federal court of a friendly suit by the American Shipbuilding Co. The Thompson company is active in the transportation of automobiles on the lakes.

THE Nicholson Universal Steamship Co. has added the CITY OF BANGOR and the PENOBSCOTT to its fleet transporting automobiles between Milwaukee and Chicago. These steamers, equipped with elevators, handle 450 cars per trip.

\* \* \*

**F**AVORABLE weather conditions plus an unusually good business outlook have brought advances in the stock of the Great Lakes Dredge & Dock Co. Earnings are expected to approximate \$30 a share. Never in the history of the Great Lakes have large corporations pursued such a tendency to utilize water transporta-

tion. In the immediate Chicago vicinity the company is working on piers for the Youngstown Sheet & Tube Co. at Indiana Harbor, the Universal Portland Cement Co. at Buffington and on a recreation pier at Whiting. The company has completed the new concrete dock of the Dunham Towing & Wrecking Co. at Calumet.

\* \* \*

**P**UBLIC WORKS COMMISSIONER SPRAGUE of Chicago is recommending to the Chicago city council that after Jan. 1, 1930, the present policy of constructing movable bridges across the Chicago river be abandoned, and that new bridges be erected

with a clearance of 16 feet 6 inches above datum.

\* \* \*

**C**APT. DAVID M. COCHRANE, who became a pilot at New York in 1860 and came to the Great Lakes in the 60's, died at his home in Chicago, July 26, at the age of 85. Prior to his retirement he had been superintendent of the Goodrich Transit Co., Chicago.

Another old-time Great Lakes sailor to pass in July was Capt. Charles Wilson, also of Chicago. He was born in Norway in 1835, and for many years commanded a vessel on the Great Lakes. He died July 6.

## Ocean Freight Rates

Per 100 Pounds Unless Otherwise Stated

Quotations Corrected to Aug. 17, 1925 on Future Loadings

NOTE: FREIGHT RATES STEADY WITH BUSINESS QUIET

New York to	Grain	Provisions	Cotton (H. D.)	Flour	General cargo	Finished steel	REMARKS	From North Pacific	Lumber
					cu. ft.	100 lbs.	Freight Offered	Ports to	Per m.f.t.
Liverpool . . .	1s 9d	\$0.50	\$0.30 to 0.45	0.18	\$0.40	\$0.75	Very slow	San Francisco.....	\$5.00
London . . .	1s 9d	0.50	.....	0.18	0.40	0.75	Very slow	South California.....	5.00 to
Oslo.....	\$0.16	0.45	0.50	0.27	0.42½	0.85	Fair	Hawaiian Islands.....	10.00 to 12.00
Copenhagen....	0.13	0.45	0.50	0.26	0.42½	0.85	Fair	New Zealand.....	17.00 to 20.00
Hamburg.....	0.12	0.35	0.35	0.20	0.37½	0.75	Fair	Sydney.....	13.50 to 14.50
Bremen.....	0.12	0.35	0.35	0.20	0.37½	0.75	Fair	Melbourne-Adelaide....	14.00 to 15.00
Rotterdam and Amsterdam..	0.13	0.32½	0.45	0.20	0.35	0.70	Good	Oriental Ports.....	7.50 to 8.50
Antwerp.....	0.09	0.32½	0.35	0.18	0.35	0.70	Dull	Oriental Ports (logs)....	11.50 to 13.00
Havre.....	0.14	0.50	0.35	0.27½	0.40	0.75	Very slow	Peru-Chile.....	11.00 to 13.00
Bordeaux.....	0.14	0.50	0.35	0.27½	0.40	0.75	Very slow	South Africa.....	17.00 to 18.00
Barcelona.....	0.18	12.00T	0.30	10.00	—12.00T—	10.00T	Poor	Cuba.....	14.00 to 16.00
Lisbon.....	0.20	0.65	0.40	7.00T	—20.00T—	7.00T	Poor	United Kingdom.....	75s to 90s
Marseilles.....	0.13	0.55	0.30	6.00	—20.00T—	5.00T	Fair	United Kingdom (ties)...	70s to 80s
Genoa.....	0.15	11.25	0.40	7.25	—18.00T—	9.00T	Fair	Baltimore-Boston range..	\$14.50 to 15.50
Naples.....	0.15	11.25	0.40	7.25	—18.00T—	9.00T	Fair	Baltimore-Boston range	
Constantinople..	0.27	17.00T	0.75	0.32½	—20.00T—	9.00T	Good	(ties).....	Not quoted
Alexandria.....	.....	17.00T	0.75	0.32½	—20.00T—	9.00T	Good	Buenos Aires.....	14.00
Algiers.....	0.20	0.75	0.75	0.40	—20.00T—	7.00T	Very Slow	Flour and Wheat	
Dakar.....	.....	15.00	.....	14.00T	—21.00T—	10.50T	Fair	U. K. and Continent	
Capetown.....	10.00T	18.00	.....	12.00T	—18.00T—	18.00T	Good	(gross ton).....	33s to 35s
Buenos Aires...	.....	18.00 to 20.00T	.....	.....	18.00 to 20.00T†	8.00 to 8.80T	Very good	Oriental Ports (net tons)...	\$3.75 to 4.25
**Rio de Janeiro	.....	21.50 to 23.50T	.....	11.25 to 12.50T	19.00 to 21.00T†	7.00 to 7.70T†	Very good		
Pernambuco.....	.....	22.00T	.....	9.50T	—22.00T—	9.70T†	Good		
Havana.....	0.22½ to 0.27½*	0.42½*	.....	0.22½*	0.54*	1.08*	Good		
Vera Cruz.....	0.25	0.40	0.45	0.25	0.52½	1.05	Good		
Valparaiso.....	.....	1.07	.....	0.70	0.45	0.80	Fair		
San Francisco...	.....	0.40 to 0.70	.....	0.50 to 1.10	.....	2.50	Very good		
Sydney.....	.....	18.00T	2.50	18.00T	18.00-24.00T	9.00-12.00T	Slow		
Calcutta.....	.....	16.00T	0.60	12.00T	—16.00T—	10.00T	Slow		

T—Ton. †Per quarter of 480 lbs. †Landed. ††Heavy products limited in length. \*Extra charge for wharfage.

\*\*Plus \$1.00 surcharge on all rates to Rio de Janeiro on account of congestion.

### Principal Rates To and From United Kingdom

	s	d		s	d
Grain, River Plate to United Kingdom...	18	0	Pig iron, United Kingdom to New York or Philadelphia .....	12	6
Coal, South Wales to Near East.....	11	0	Iron ore, Bilbao to Cardiff.....	6	0
Coal, United Kingdom to Buenos Aires..	18	6	Iron ore, Huelva to Phila. or Balto.....	9	9
Manganese Ore, Poti to Philadelphia....	\$3.25				

### Bunker Prices

#### At New York

	Coal alongside per ton	Fuel oil alongside per barrel	Diesel oil alongside per gallon
Dec. 22, 1924	5.25@6.05	1.86½	5.15@5.50c
Jan. 20.....	5.25@6.05	1.86½	5.50c
Feb. 18.....	5.25@6.05	1.86½	5.50c
Mar. 17.....	5.00@6.25	1.86½	6.00@6.50c
April 20.....	5.00@6.00	1.86½	5.50
May 18.....	5.00@6.00	1.75	5.48
June 4.....	5.00@6.00	1.86½	5.50
July 20.....	4.90@6.00	1.75	5.50
Aug. 17, 1925	5.00@6.00	1.65@1.71½	5.50

#### At Philadelphia

	Coal trim. in bunk per ton	Fuel oil alongside per barrel	Diesel oil alongside per gallon
Dec. 22, 1924	5.25@5.80	1.865	
Jan. 20.....	5.25@5.80	2.06	5.41@5.65
Feb. 18.....	5.25@5.80	2.10@2.25	5.9@6.9
Mar. 17.....	5.05@5.82	2.06½@2.31	6.10@6.15
April 20.....	5.00@6.00	1.95@2.06½	5.63½
May 18.....	5.00@5.80	1.85@1.91½	5.41@5.64
June 4.....	4.90@5.50	1.86½	5.50
July 20.....	4.90@5.50	1.69@1.81½	5.15@5.43
Aug. 17, 1925	5.00@5.80	1.56@1.71½	5.15@5.29

#### Other Ports

Boston, coal, per ton...	\$6.66
Boston, oil, f. a. s., per barrel.....	\$1.72
Hampton Roads, coal, per ton, f.o.b., piers 4.50—4.75 f.o.b.	
Aug. 17 — Cardiff, coal, per ton.....	15s 0d
London, coal, per ton.....	26s 0d
Antwerp, coal, per ton.....	23s 6d
Antwerp, Fuel oil, per ton.....	77s 6d
Antwerp, Diesel oil, per ton.....	97s 6d



## New Trade Publications

**WELDING**—Theory and practice of electric welding are treated in a bulletin by the American Electric Fusion Corp., Chicago, which strips the subject of technical features, tells it simply and describes its apparatus for obtaining the desired results in the shop.

**PORTABLE ELEVATOR**—Telling "how it revolves," is the purpose of a bulletin by the Revolver Co., Jersey City, N. J., in which it shows the inner and outer workings of its portable elevator with the revolving base, which it its distinguishing feature.

**ELECTRICAL CONTROLLERS**—Devices automatically bringing motors to full speed in a brief period with perfect safety when a line switch is thrown are featured in a bulletin by the Monitor Controller Co., Baltimore. The devices and typical installations are shown in halftone.

**ARC WELDERS**—Lincoln Electric Co., Cleveland, has issued a catalog of its welding machines in which it points out the large number of branches of industry in which welding is employed.

**VACUUM RECORDER**—Uehling Instrument Co., Paterson, N. J., has issued a bulletin covering its vacuum recorders, which utilize the mercury column principle and have no springs or diaphragms. An improved

type of chart to attain legibility is also shown.

**HOISTS**—Electric hoists of rugged design for use in machine shops to keep machines busy by supplying work without delay, as well as for other uses, are illustrated in a pocket folder by the Roeper Crane & Hoist Works, Inc., Reading, Pa.

**PIPE THREADERS**—Landis Machine Co., Inc., Waynesboro, Pa., has issued a catalog covering its pipe threading and cutting machines and similar devices. Halftones of the machines and parts and specification data tables make it complete and fully informative.

**ELECTRICAL APPARATUS**—Westinghouse Electric & Mfg. Co., Pittsburgh, has issued its 1925 biennial catalog covering its complete line of apparatus and supplies. It consists of 1200 pages with 4500 illustrations. It is fully indexed in four methods and a thumb tab index aids rapid finding of any section.

**TURBINE BLOWERS**—L. J. Wing Mfg. Co., New York, has issued a bulletin on its turbine blowing machines, containing much more information than previous issues, with data and graphs showing application to stroke and hand fired boilers.

**WELDING AND CUTTING**—Smith's Inventions, Inc., Minneapolis, has completed its current catalog illustrating its welding and

cutting equipment and supplies. Details of the acetylene generator and other devices are shown in illustrations and a wide range of equipment is covered.

**WAREHOUSE TRUCKS**—Trucks of various kinds for use in industrial plants and warehouses are illustrated in a bulletin by the H. Zering Mfg. Co., Cincinnati, O. They range from baggage trucks to two-wheeled hand trucks, through a wide variety of uses.

**OXYACETYLENE**—Answers to questions about the oxyacetylene process are given in a booklet by the Air Reduction Sales Co., New York. The information gathered into this small compass gives an unusually good insight into some of the features of this process and incidentally supplies information relative to the products of the company.

**LIFT TRUCK PLATFORMS**—Lewis-Shepard Co., Boston, has issued a bulletin describing its platforms and boxes for use with lift trucks and improvements to make them more durable and serviceable.

**AIR TURBINE MOTOR**—A motor impelled by air acting through a turbine member, to operate wire brushes to scale ships, clean castings and remove scale from billets in steel mills is presented in a bulletin by the Standard Turbine Corp., New York. Many advantages are claimed for this form of motor for these purposes.

**VENTILATION**—Use of disc fans to remove odors, gases or impure air from rooms without installing pipes or ducts is described in a bulletin by American Blower Co., Detroit.

## Business News for the Marine Trade

Inter-Ocean Steamship Co. has been organized at Tampa, Fla., as a consolidation of Lykes Bros. and Tampa Inter-Ocean Steamship Co. H. T. Lykes, 341 Hyde Park avenue, is president of the new consolidation. H. C. Gulbreath is secretary. Operating headquarters have been moved to New Orleans.

Anchor Line has been incorporated with \$300,000 capital at Detroit, to carry on commerce on the Great Lakes, by Bethune Duffield, 1796 Burns avenue, Muir B. Duffield, and Charles A. Kanter.

The main plant of the Defoe Boat Building Co., Saginaw, Mich., was damaged by fire recently with loss approximating \$500,000. Sixteen new high powered motors, ready for installation in government speedboats, were ruined.

Swan Creek Ferry, Glenwood, W. Va., has been incorporated with \$10,000 capital by R. E. Starkey, J. B. Reed, J. H. Reed and Jesse Reed.

Hudson River Lighterage Corp., Albany, N. Y., has been incorporated with 150 shares common stock no par value by G. L. Tobin, J. B. Erway and E. Van Loon. N. F. Town-er, Albany, is attorney.

McAllister Navigation Co., New York, has been incorporated with \$200,000 capital by M. S. Mulvihill, J. J. Clair and W. P. Schaefer. R. W. Maloney, 305 Broadway, is attorney.

Pistagua Heights Dredge Co., R. F. D. No. 1, McHenry, Ill., has been incorporated to do dredging, building and construction, by Charles W. Johnson, George B. Tonyan and

William H. Tonyan. J. Scott Matthews, 1010 County building, is attorney.

Clifton B. Drake, 23 North Tenth street, Philadelphia, has taken over the plant of the Butterfield Machine Shop, Wildwood, N. J., and will continue the production of marine engines.

Marra Stevedoring Co., New York, has been incorporated with \$5000 capital by C. and F. Marra and F. L. Heslin. H. M. Latner, 350 Fulton street, Fulton, is attorney.

Hermann Ferry & Packet Co., Hermann, Mo., has been incorporated for \$10,000 by Fred Lang and William L. Heckman.

Marine City Motor Castings, Marine City, Mich., has taken over the properties of the defunct McLouth Industries, Inc., builder of motors and engines. George E. Kramer is general manager of the new company.

Albina Marine Iron Works, Loring and Lewis streets, Portland, Oregon, suffered severe loss by fire Aug. 2, part of plant being destroyed and equipment damaged.

Defiance Towing Co., New York, has been incorporated with \$5000 capital by W. Barnett, A. Lang and D. Rose. T. Bouchardt, 17 Battery place, is attorney for the corporation.

Marine Machine shop, Charleston, S. C., has been incorporated by John F. McLaughlin and O. R. Craig.

Wilmington-Southport Steamboat Co. has been incorporated with \$75,000 capital by L. D. Potter and W. C. Manson.

National Industrial & Marine Adjusting Agency, New York, has been incorporated

with 200 shares common stock no par value by A. F. Kulber and P. White. A. M. Kulber, 47 Hudson avenue, Brooklyn, is attorney.

Drydock Contracting Co., New York, has been incorporated with \$5000 capital by S. Levine, J. Feld, and I. Zapruder. E. M. Laitman, 261 Broadway, is attorney.

Absecon Dredging Co., Atlantic City, N. J., has been incorporated for \$200,000 to engage in dredging, etc., by Edwin S. Johnson, New York, William R. Legge and Esther M. Legge, Point Pleasant, with Edmund C. Gaskill, Jr., Atlantic City, as attorney.

Daily Marine Guide Publishing Co. has been incorporated at New York for \$20,000 by H. E. and C. E. Stocker and R. Hutchinson, with L. K. Martus, 342 Madison avenue, as attorney.

Seaboard Scow Corp. has been incorporated with 1200 shares no par common stock to own and operate floats, by W. B. Duncan, J. G. Shaw, and R. J. Bushey, with Parsons, Closson & McIlvain, 52 William street, as attorneys.

E. F. Keating Pipe Bending & Supply Co., Hartford, Conn., was recently formed with an authorized capitalization of \$150,000, all common stock, in the state of Connecticut, with the following officers: E. F. Keating, president and treasurer; H. K. Herbinson, vice president; Charles J. Cannon, secretary.

Its plant in West Hartford is now equipped to fabricate power plant piping, including the bending and van stoning of all tubular products, genuine wrought iron pipe, full weight steel pipe, as well as brass and copper tubing.